Amendments to the Drawings:

Please replace the original 42 drawing sheets (figures 1-41) with the attached set of 47 replacement sheets of formal drawings.

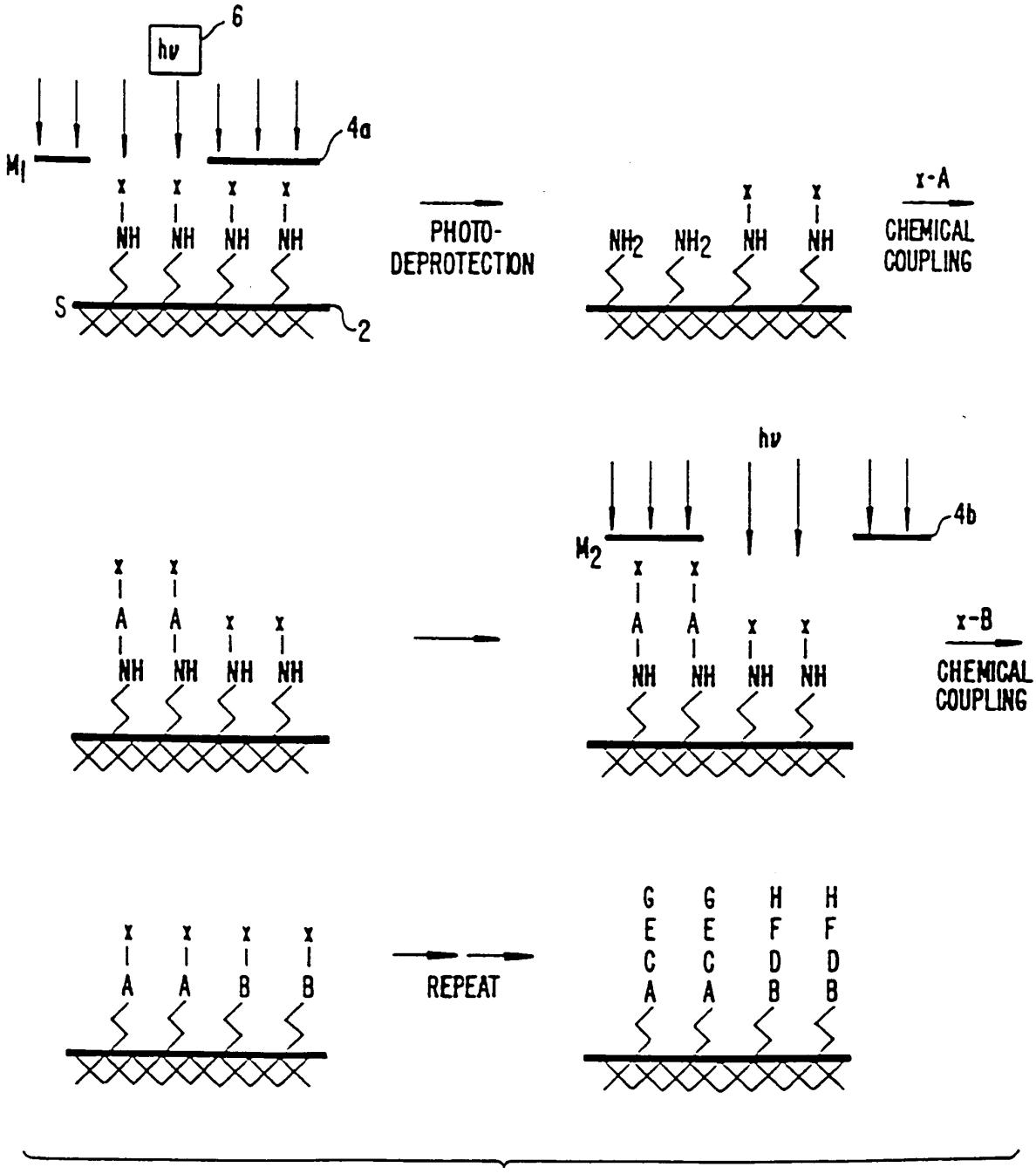

6
hν
4a
M1
X
NH
S
2
PHOTO-
DEPROTECTION
NH2
X-A
CHEMICAL
COUPLING
hν
4b
M2
A
X-B
CHEMICAL
COUPLING
REPEAT
G
E
C
A
H
F
D
B

FIG. 1

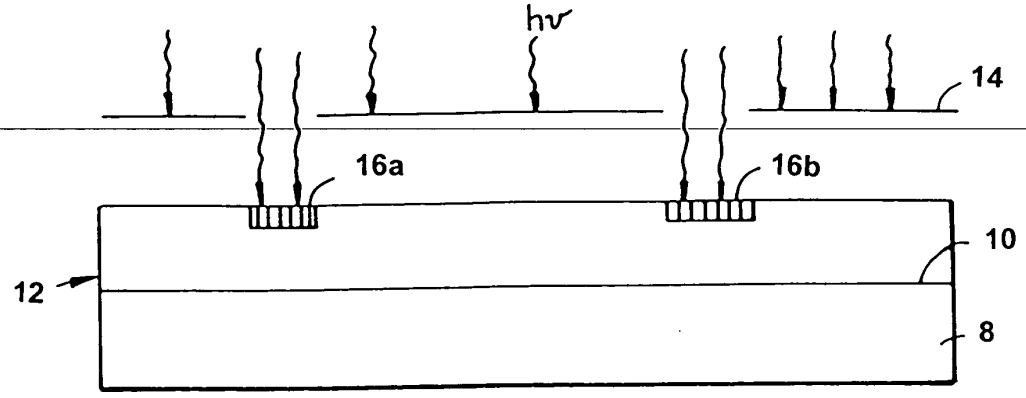


FIG. 2

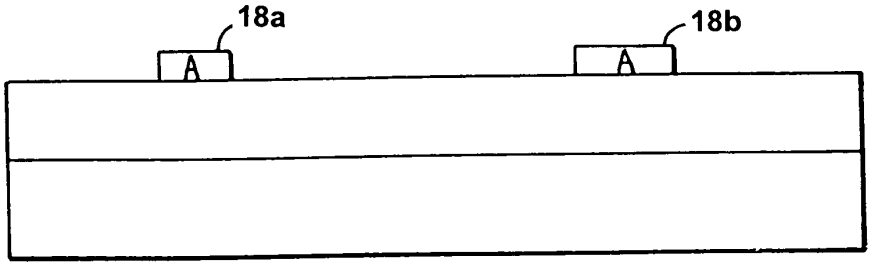


FIG. 3

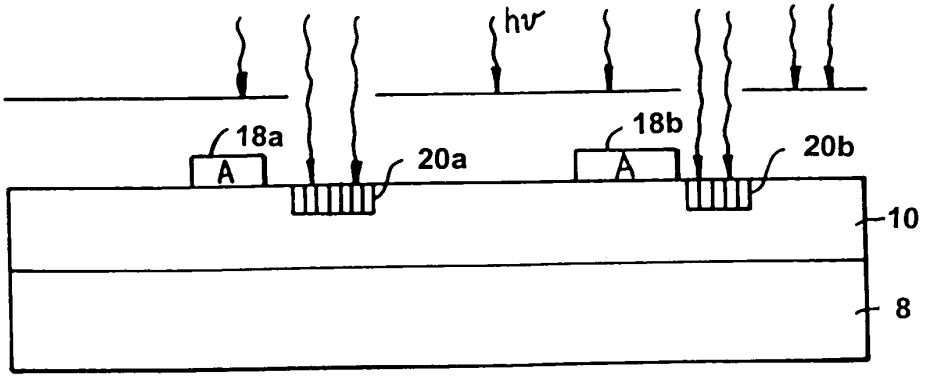


FIG. 4

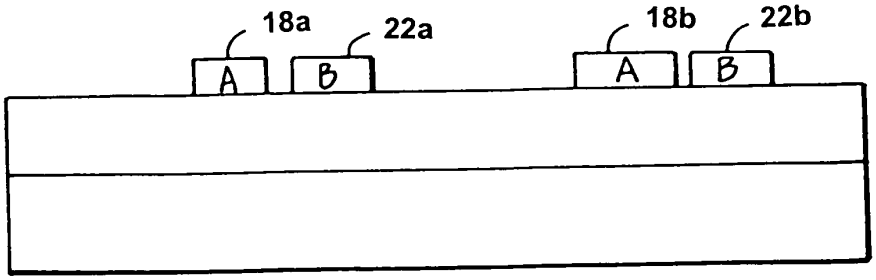


FIG. 5

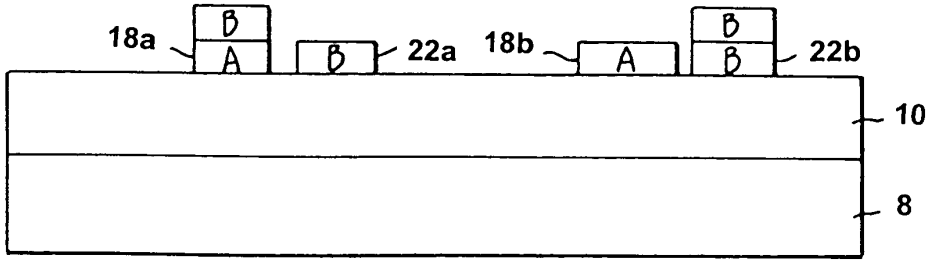


FIG. 6

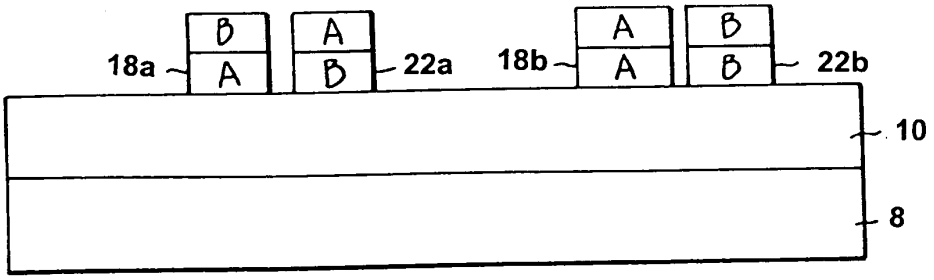


FIG. 7

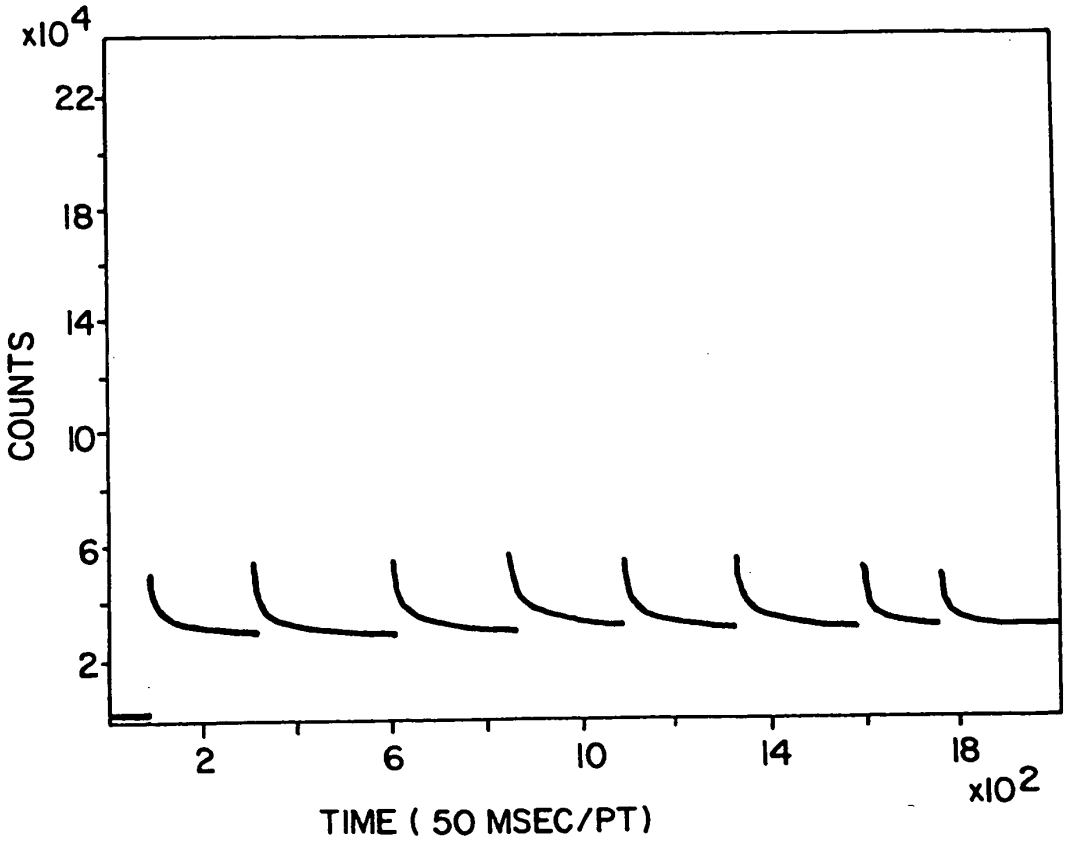


FIG. 8A

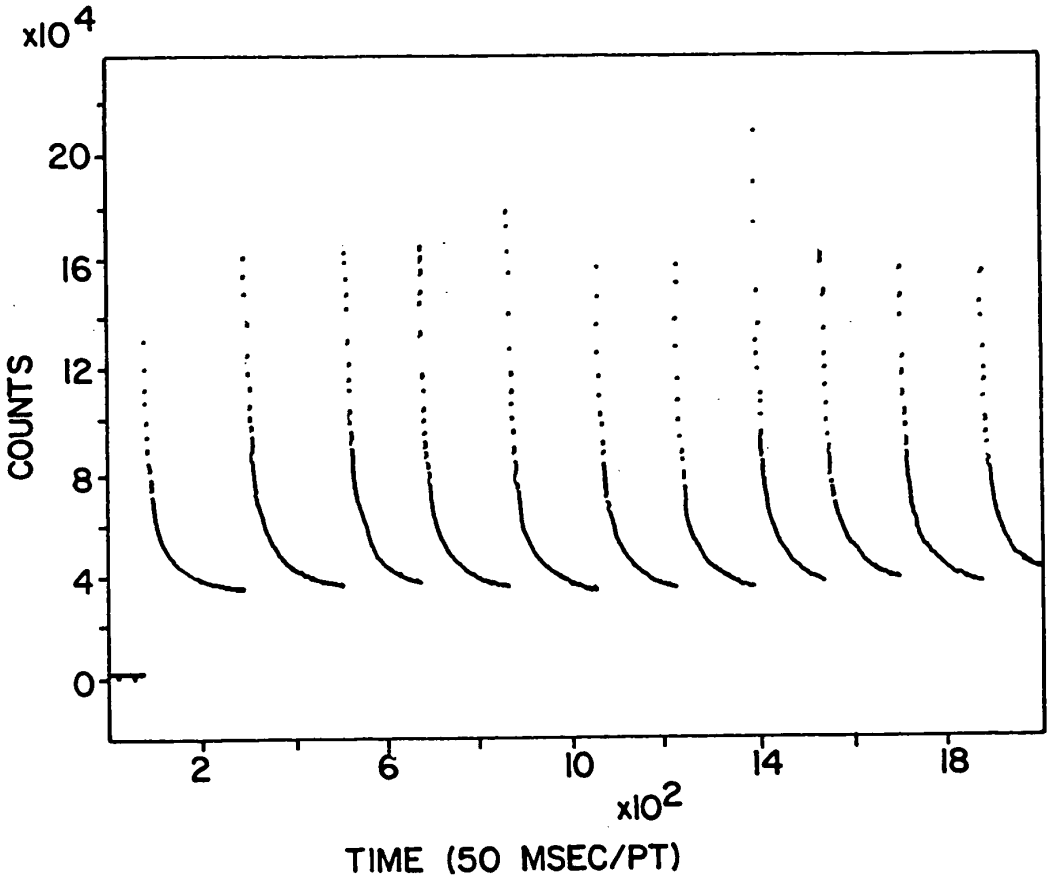


FIG. 8B

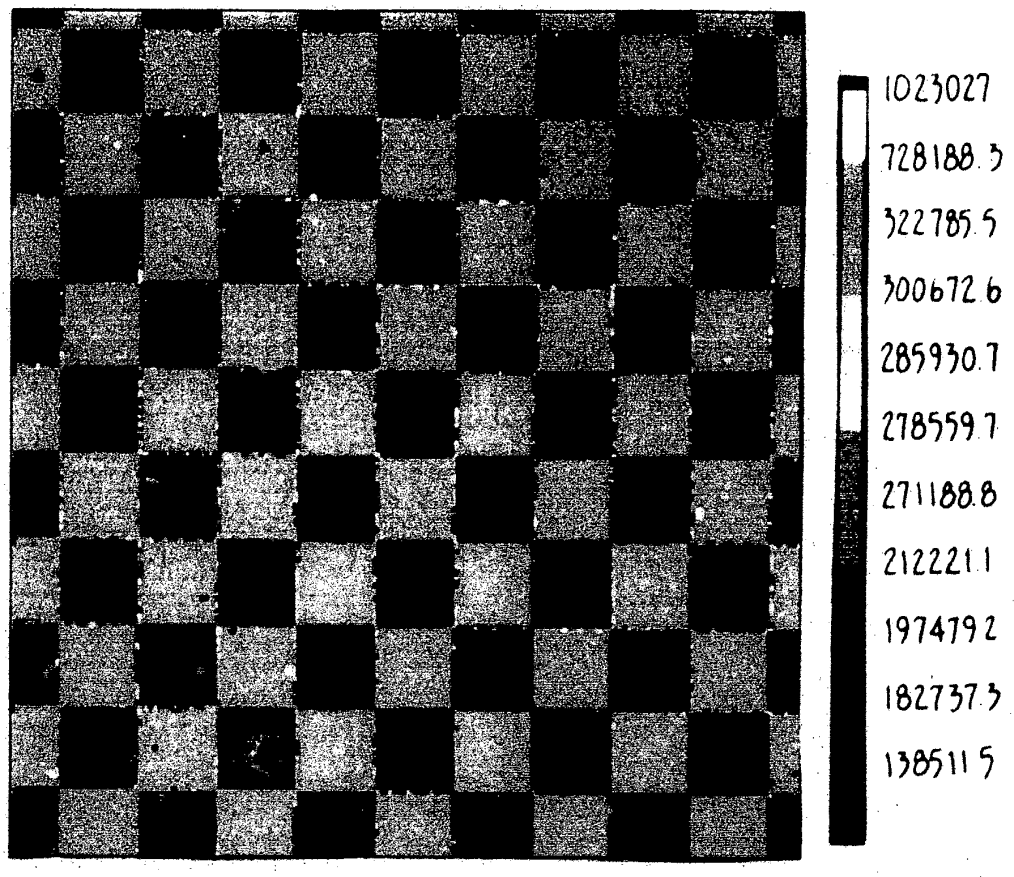


FIG. 9A

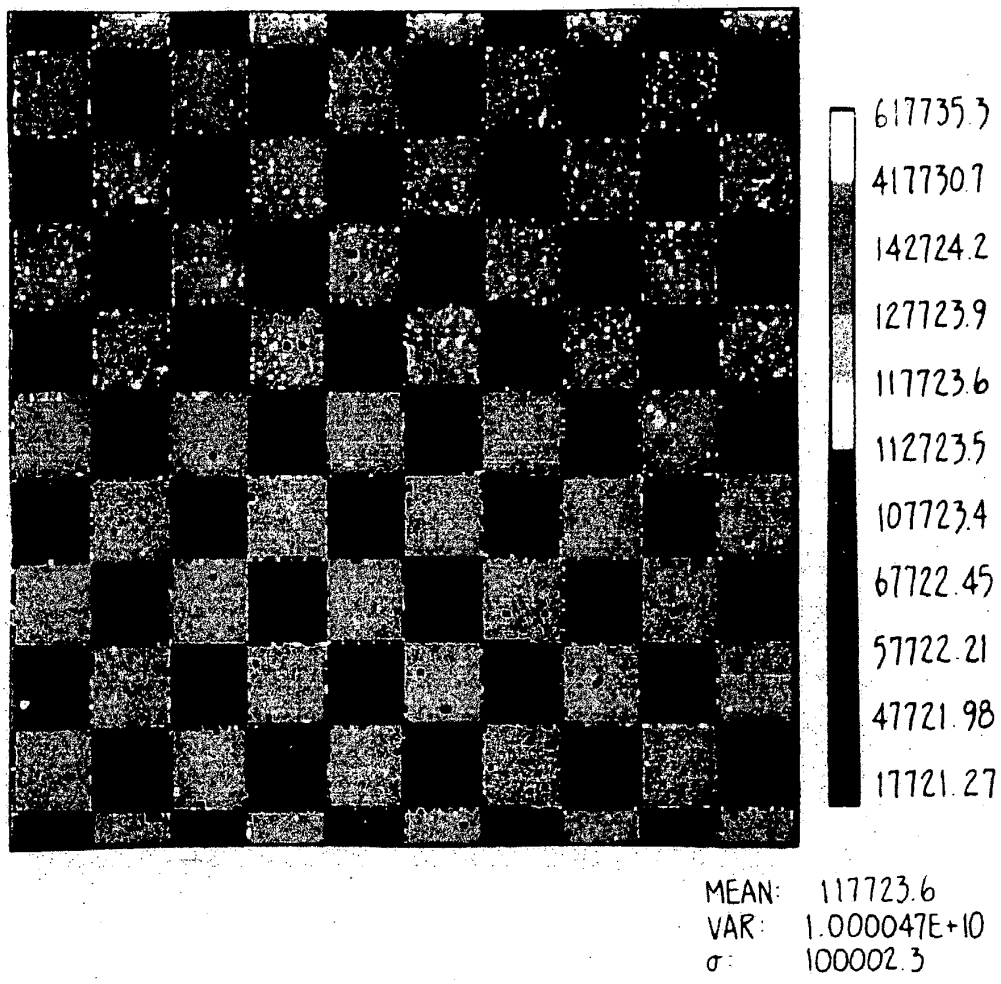


FIG._9B.

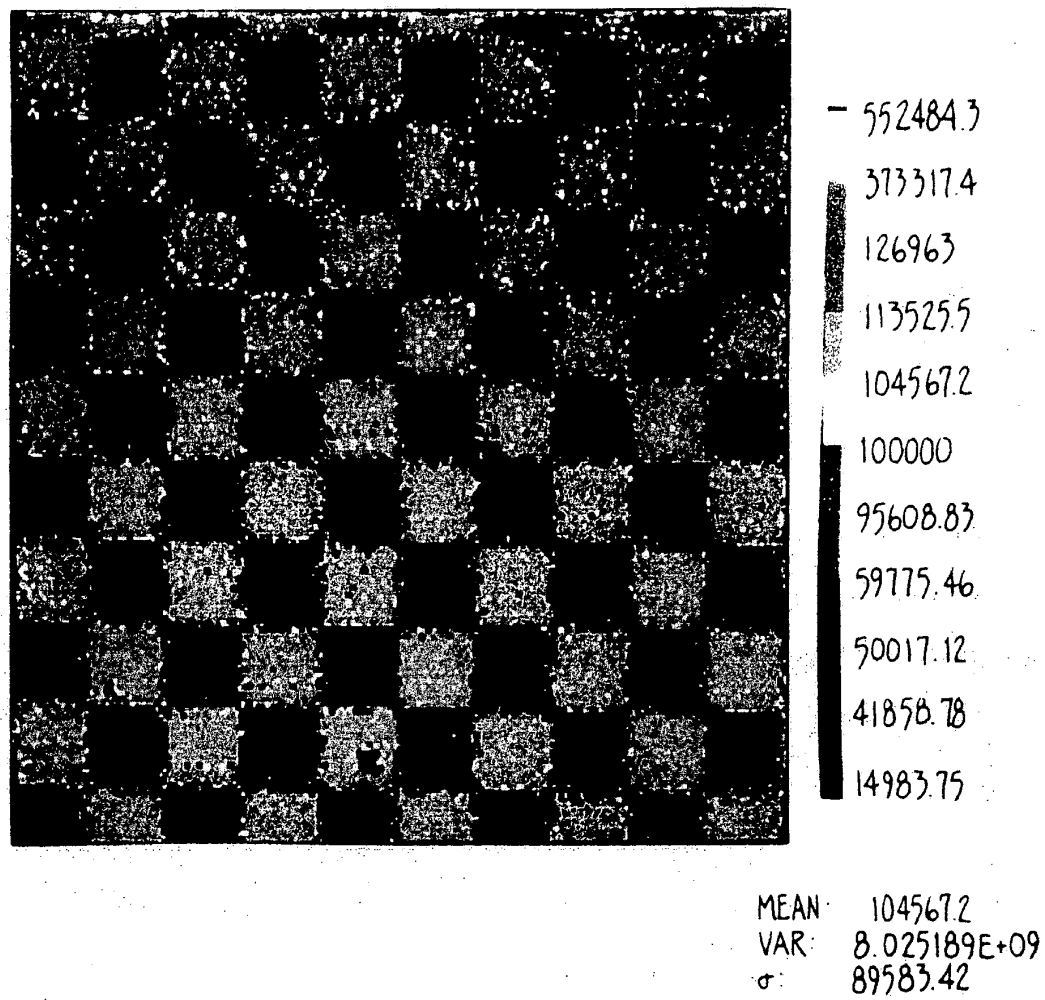


FIG._9C.

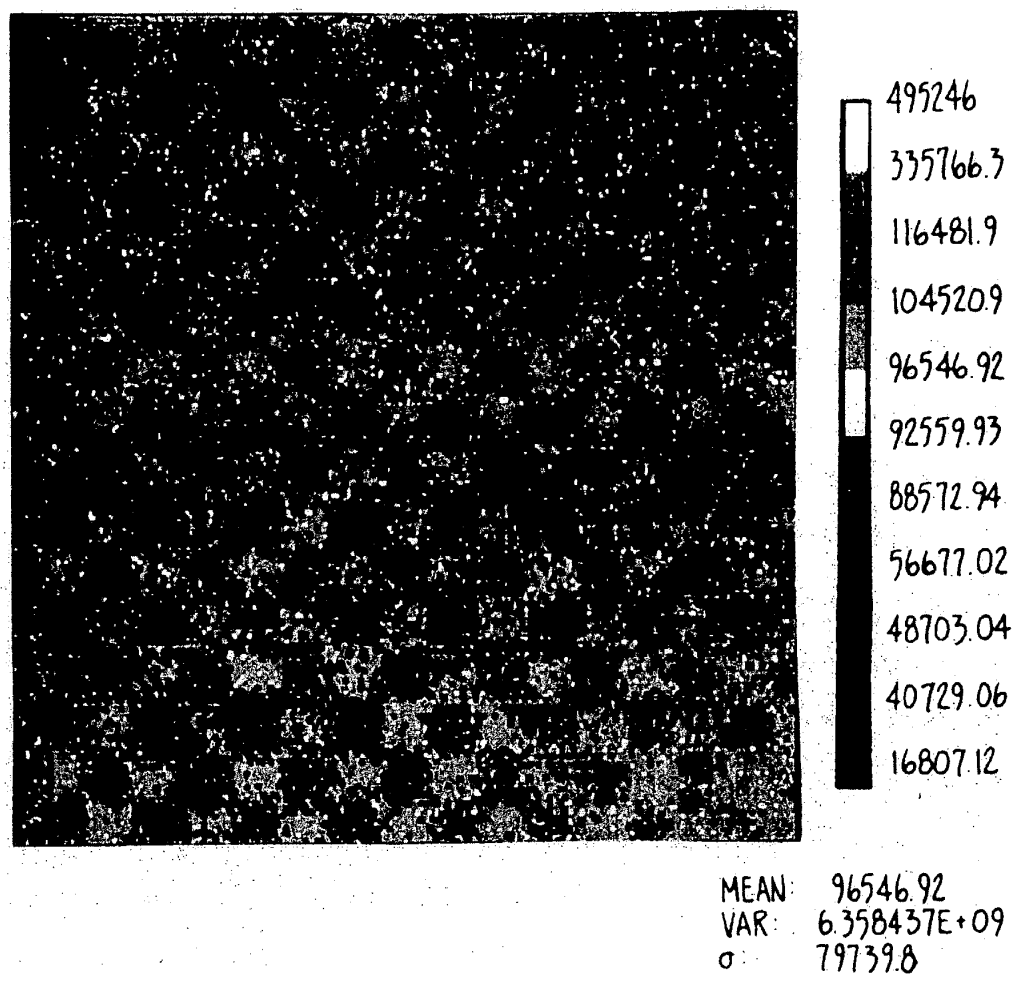


FIG._9D.

BEST AVAILABLE COPY

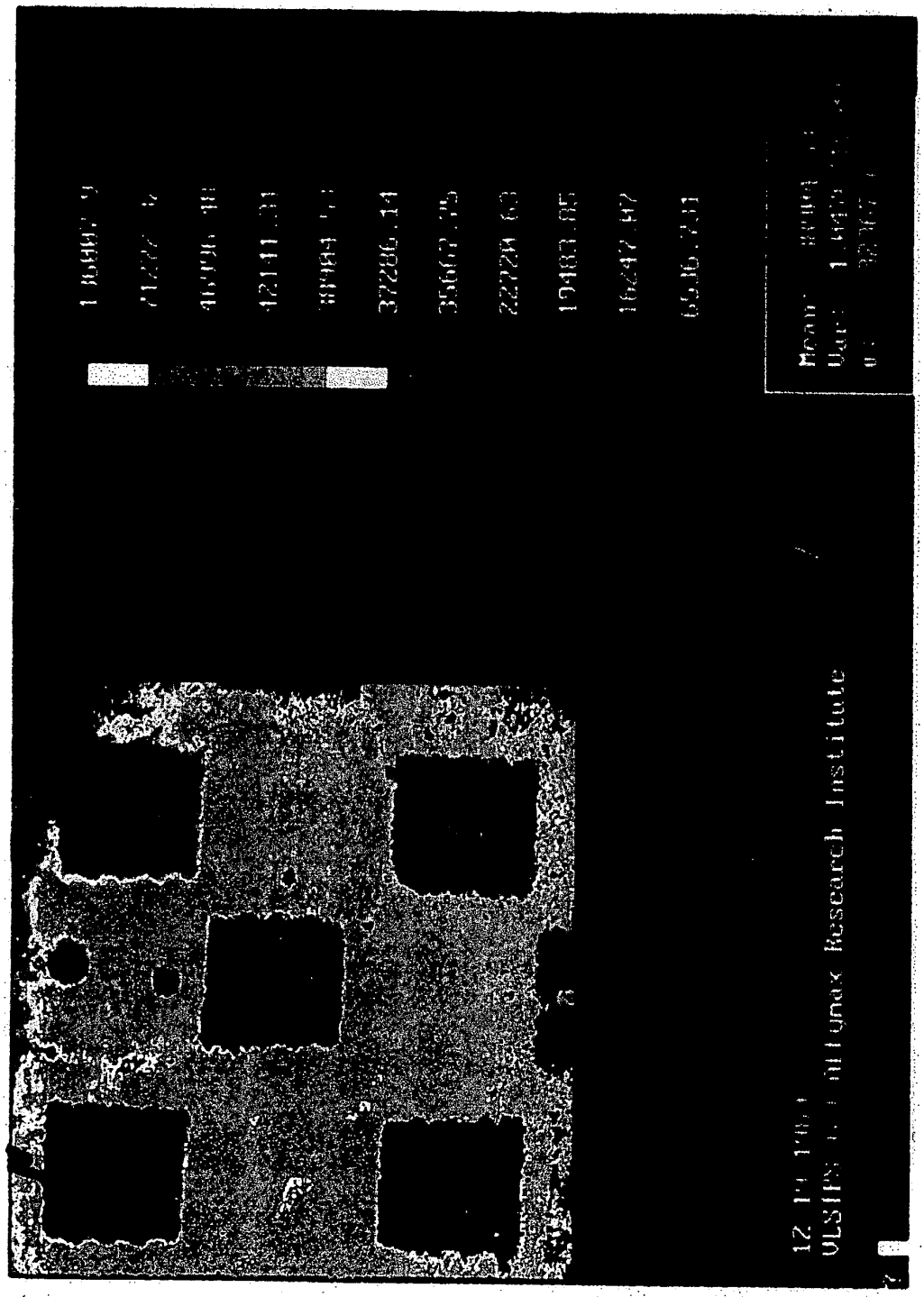


FIG. 10.

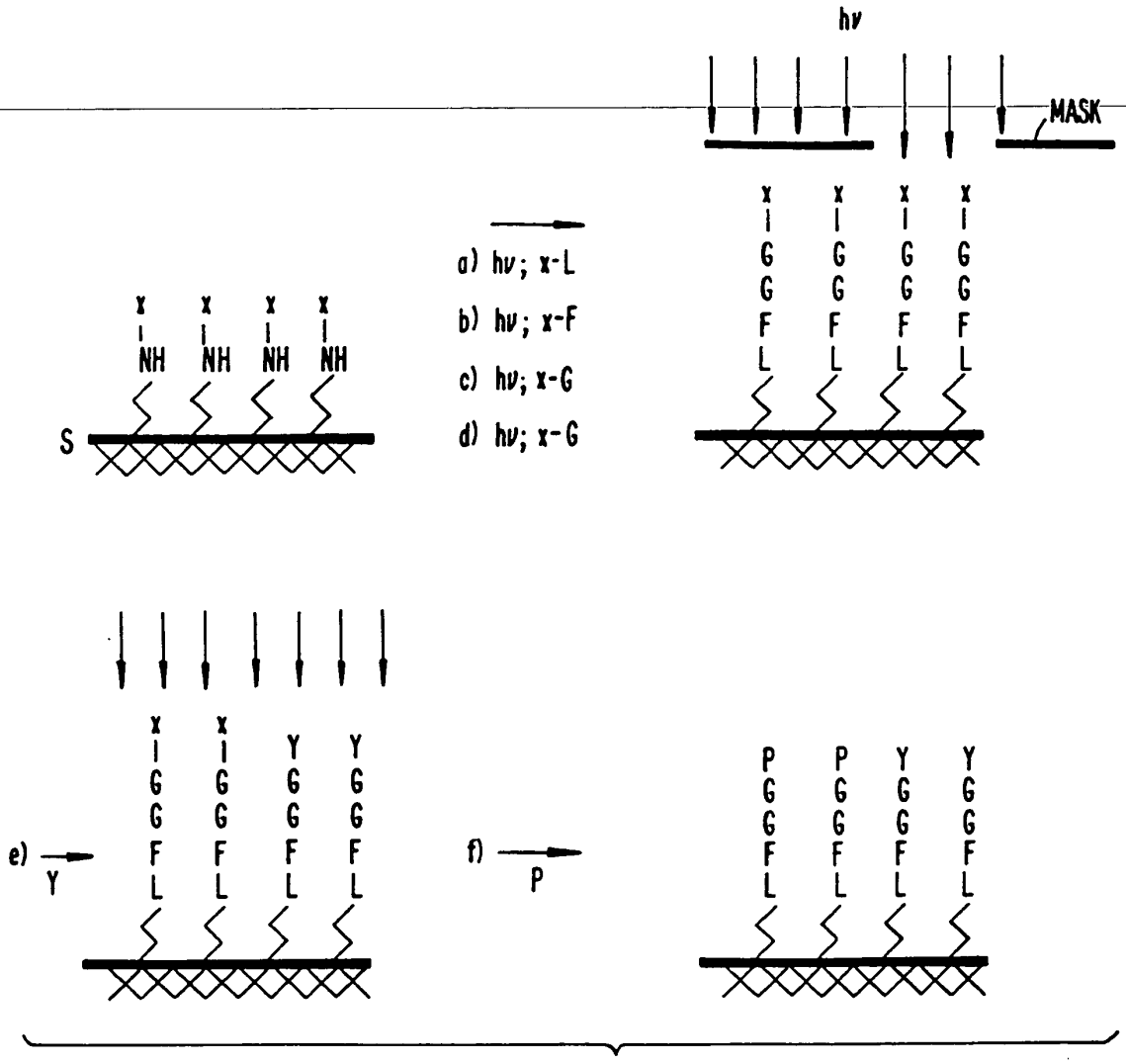


FIG. 11

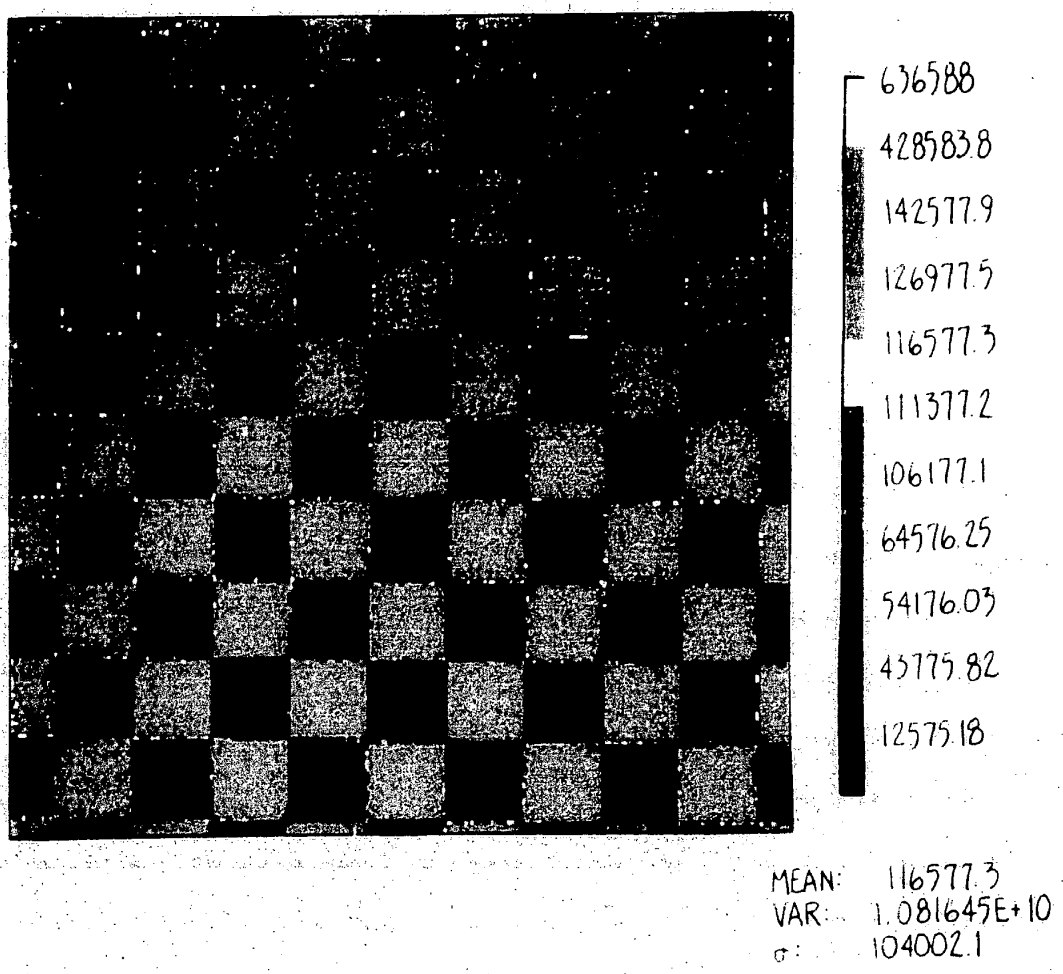


FIG._12.

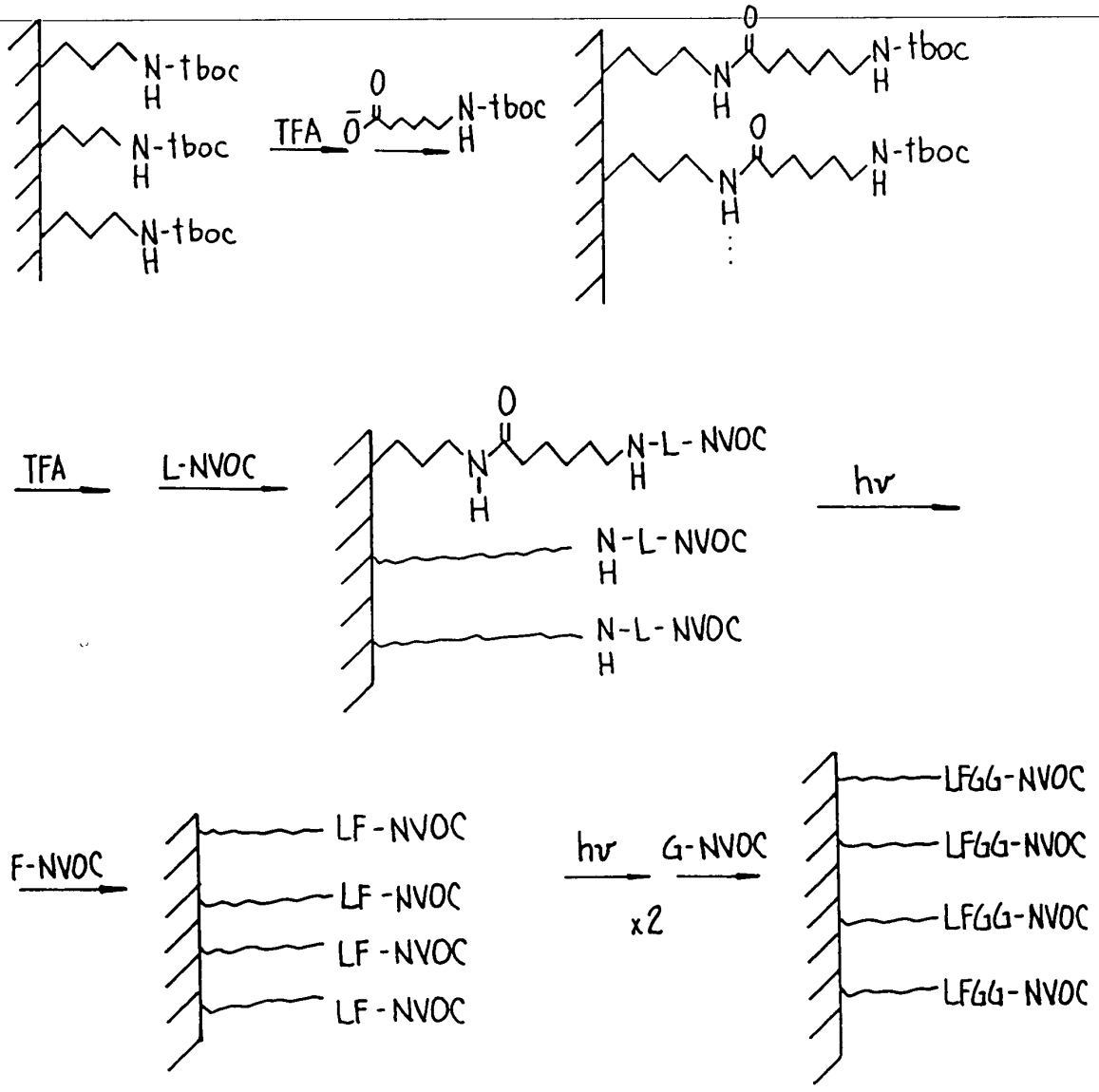

N-tboc
H
N-tboc
H
N-tboc
H
TFA
O
O
N-tboc
H
O
N
H
O
N-tboc
H
N
H
O
N-tboc
H
N
H
TFA
L-NVOC
O
N
H
N-L-NVOC
H
hv
N-L-NVOC
H
N-L-NVOC
H
F-NVOC
LF-NVOC
LF-NVOC
LF-NVOC
LF-NVOC
hv
G-NVOC
x2
LFGG-NVOC
LFGG-NVOC
LFGG-NVOC
LFGG-NVOC

FIG. 13A

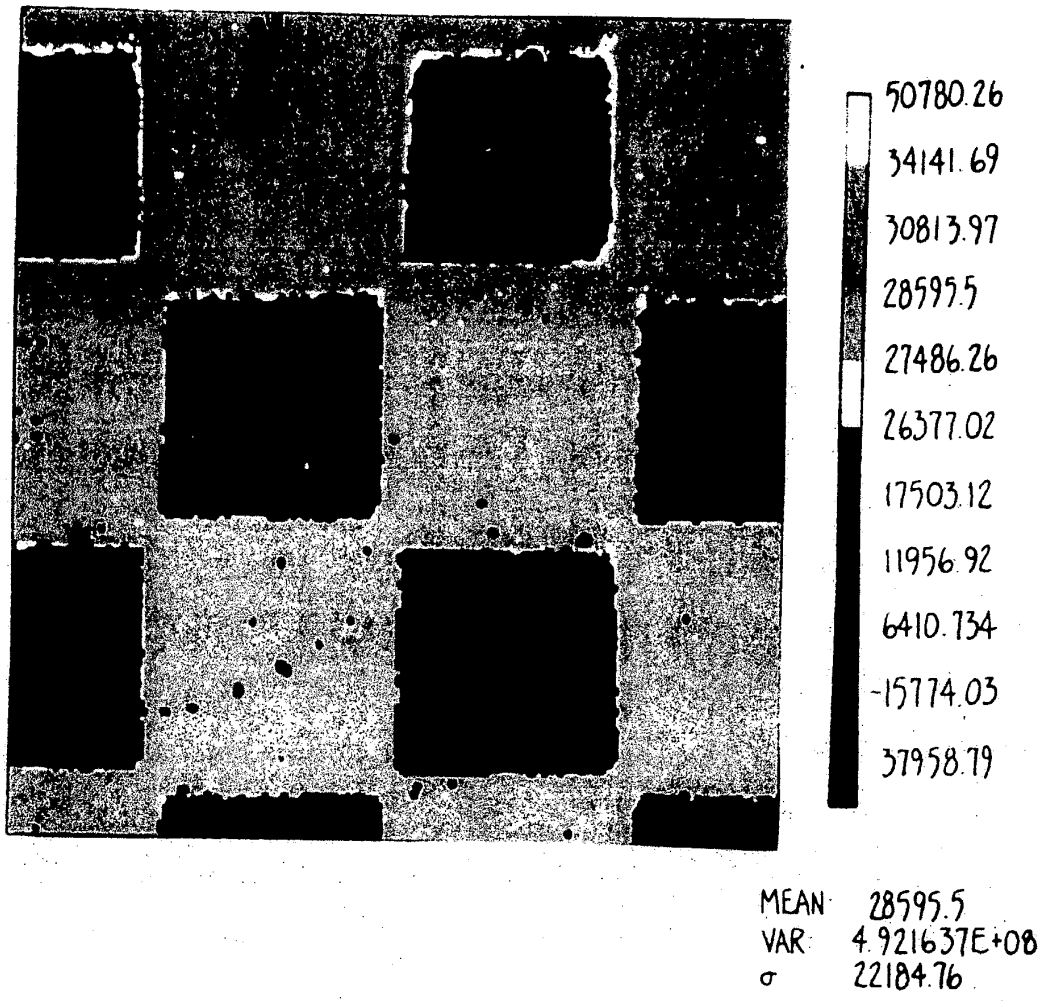


FIG._13C.

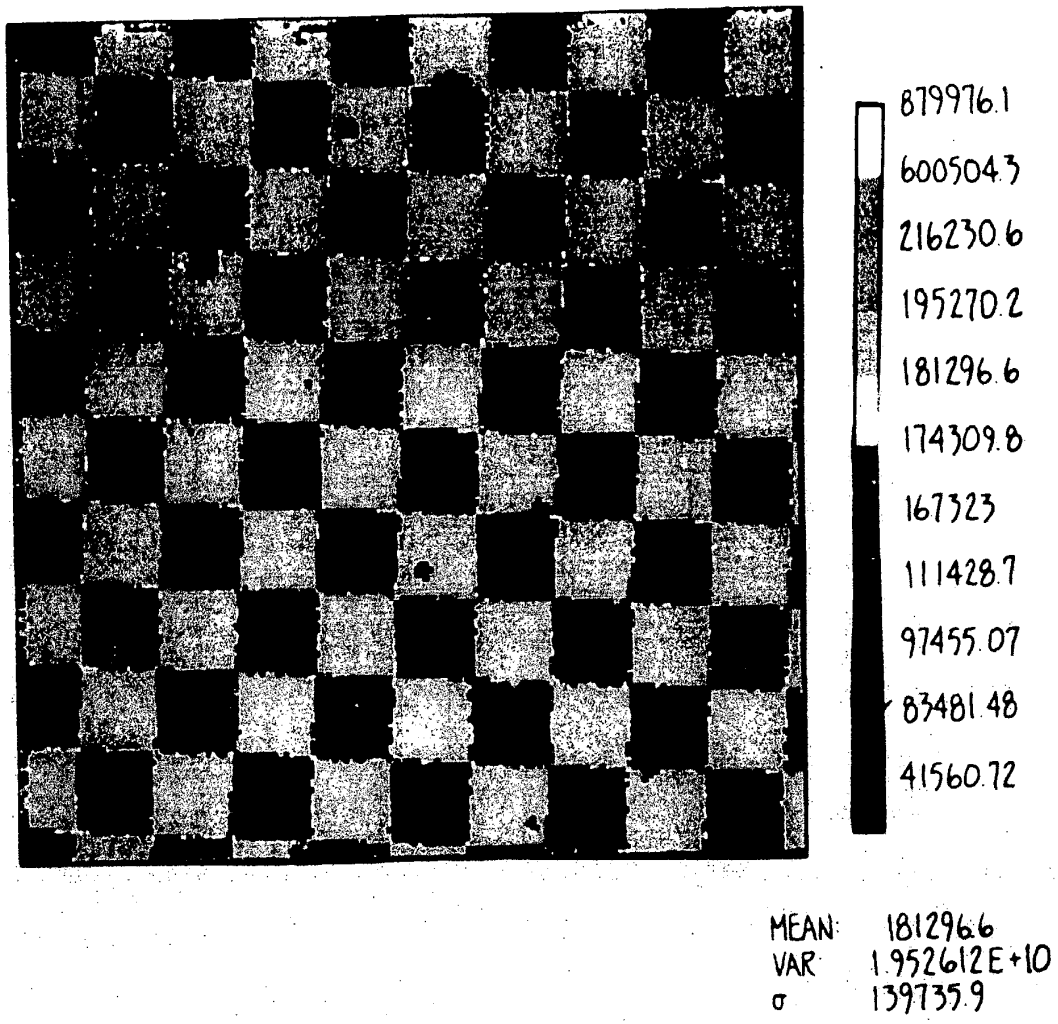


FIG._13D.

BEST AVAILABLE COPY

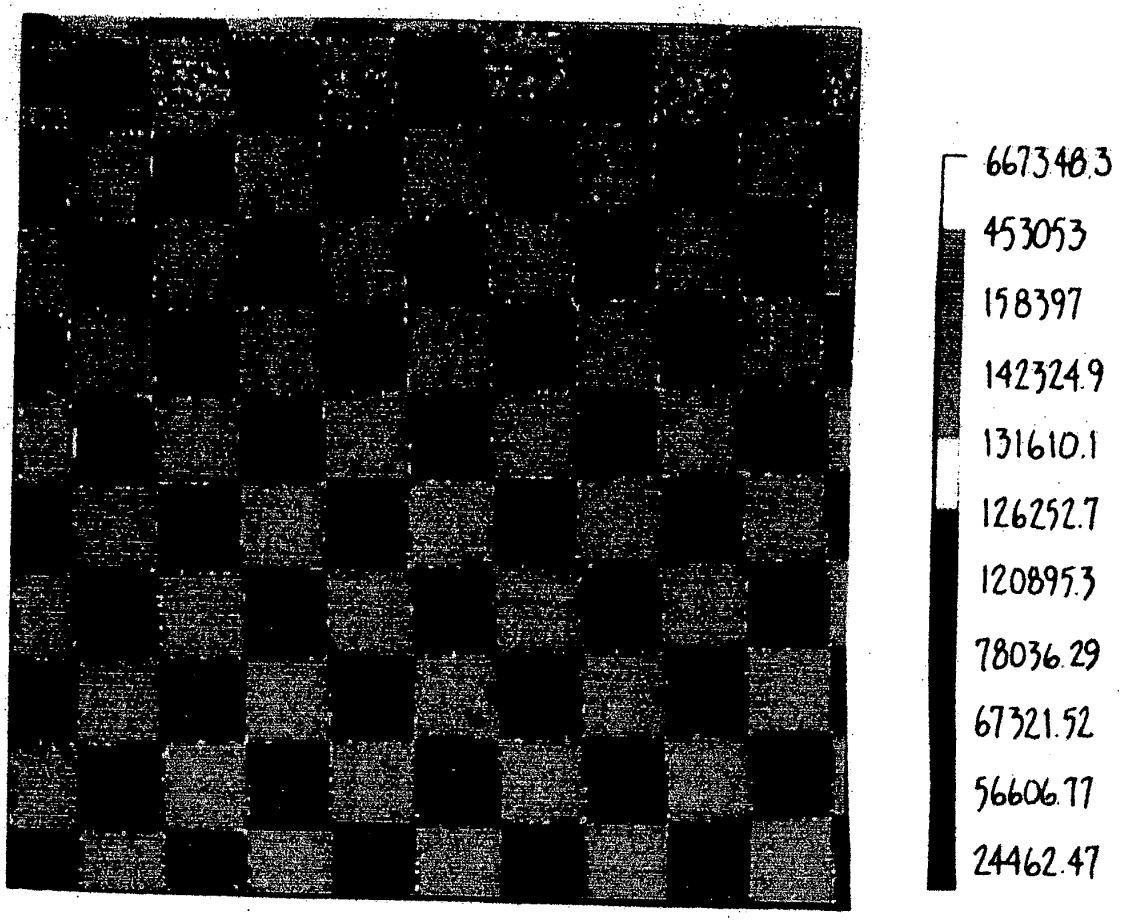


FIG. 14

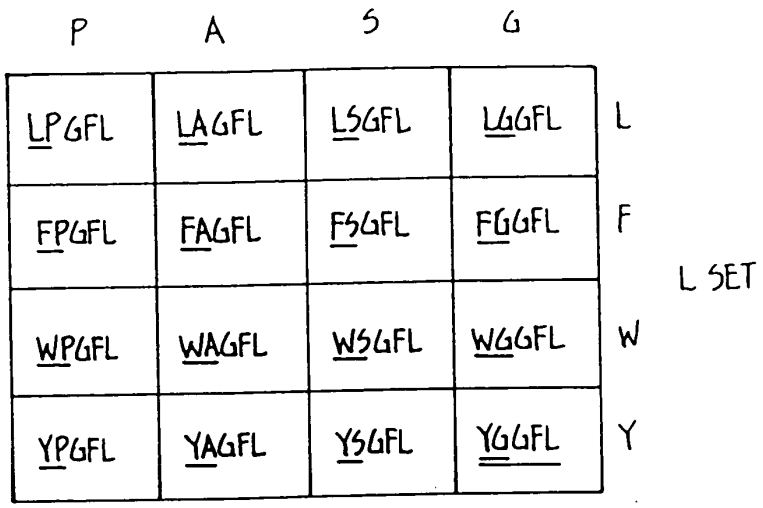


FIG. 15A

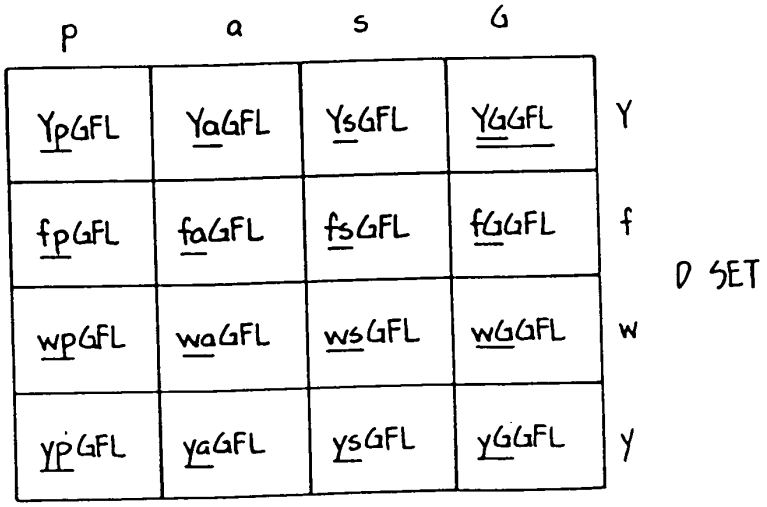


FIG. 15B

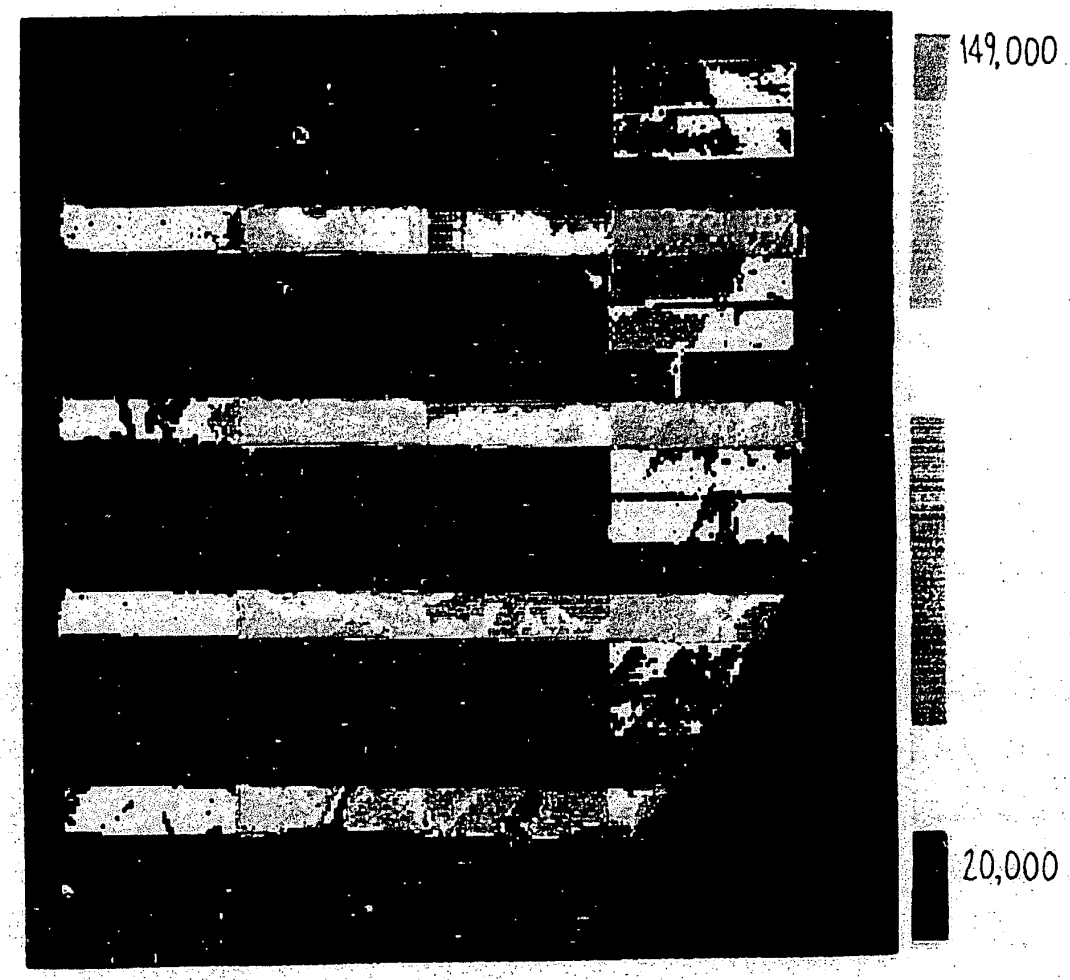


FIG._16.

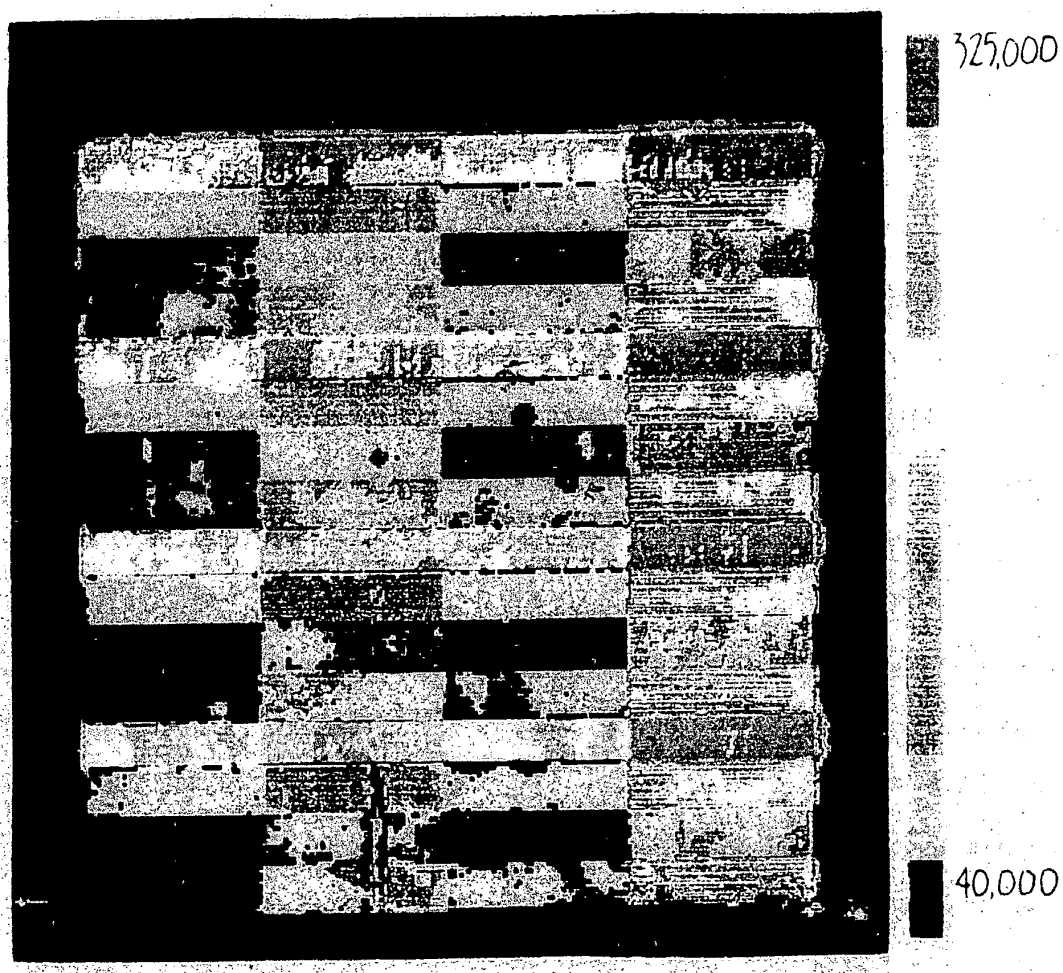


FIG._17.

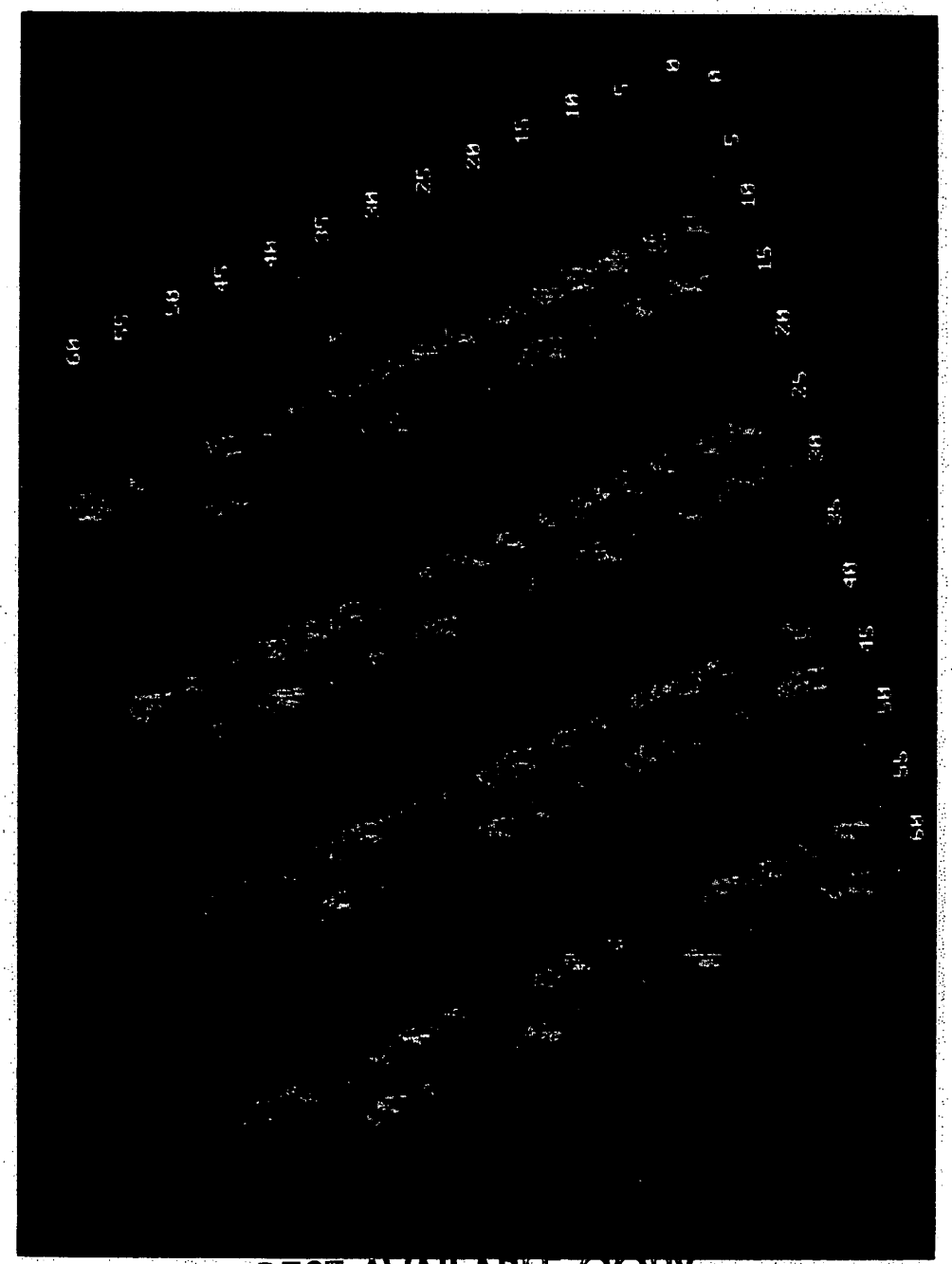


FIG. 18.

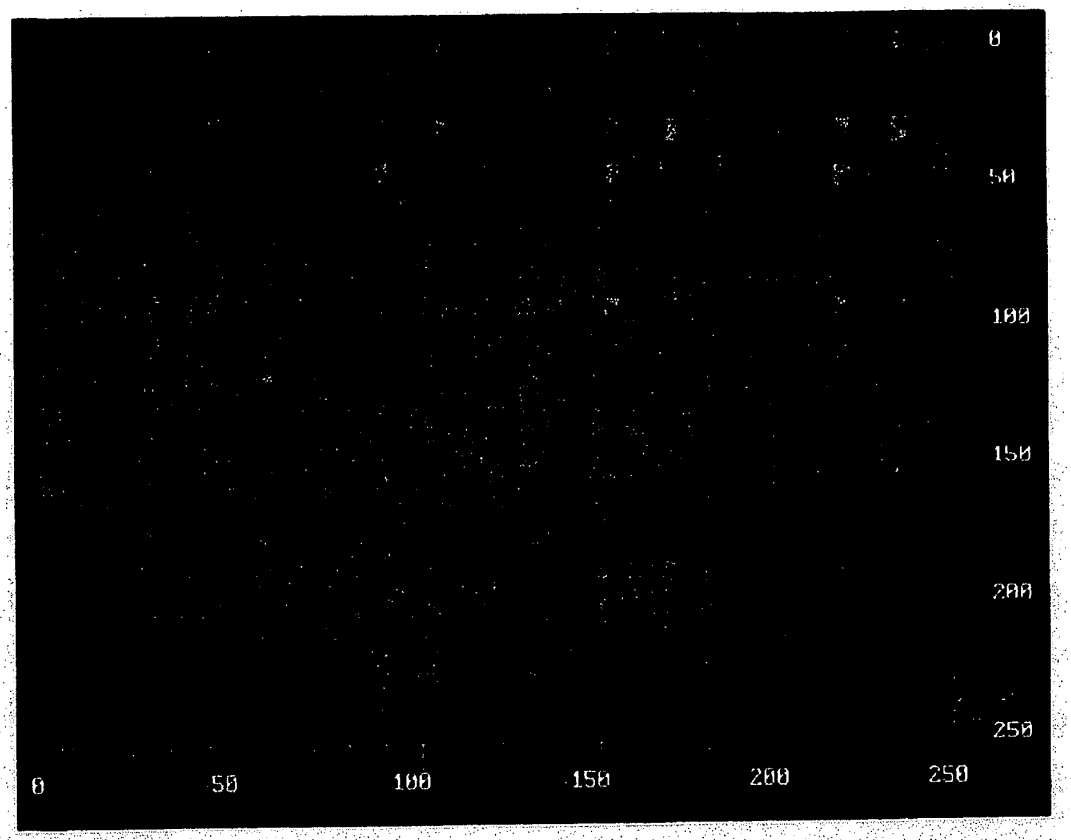


FIG. 19.

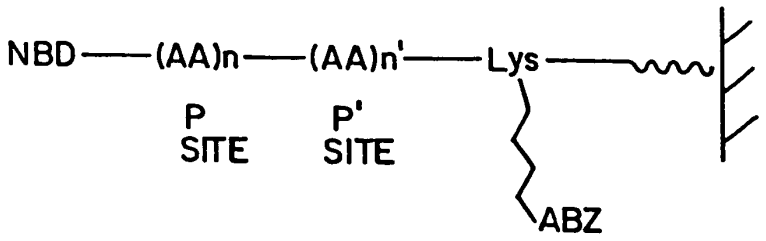


FIG. 20A

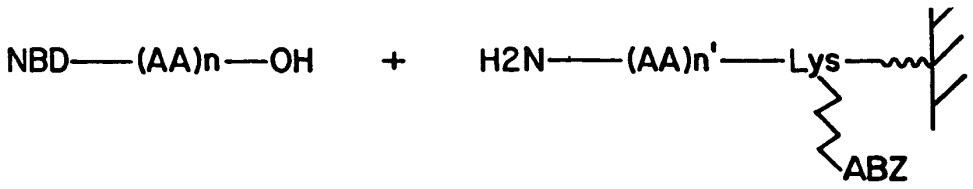


FIG. 20B

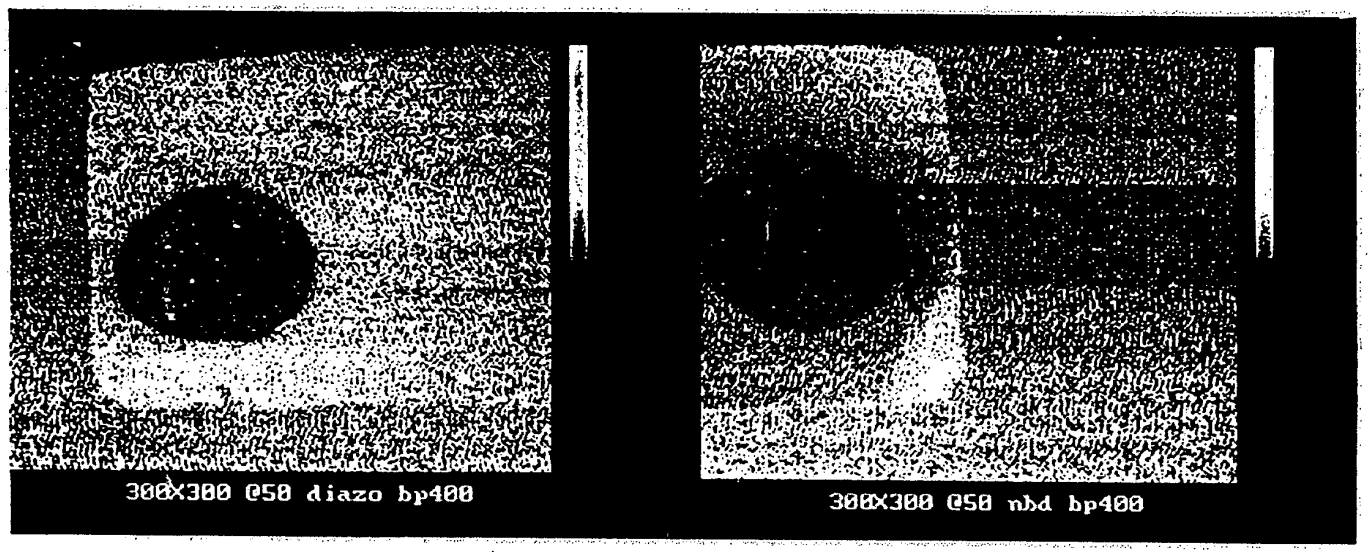


FIG. 21A.

FIG. 21B.

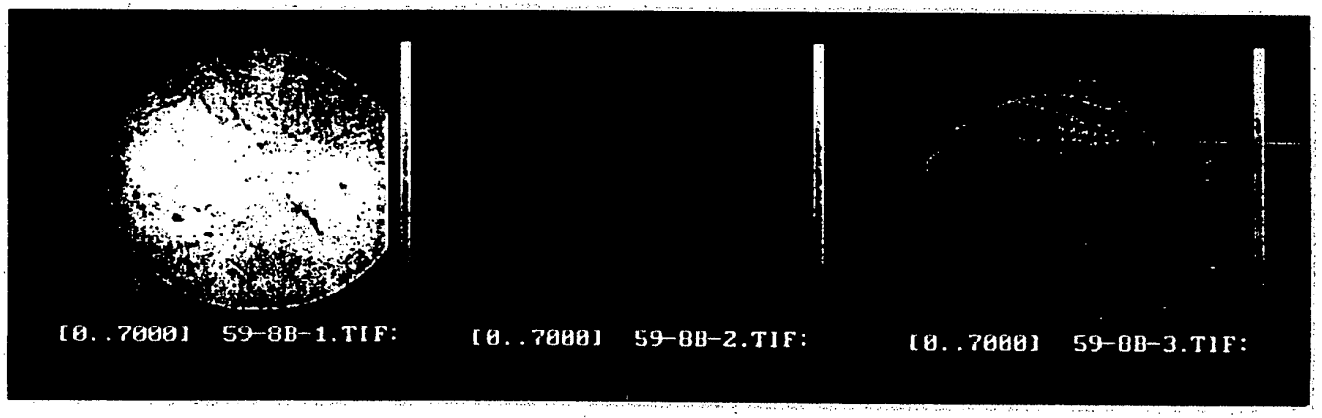


FIG. 39A.

FIG. 39B.

FIG. 39C.

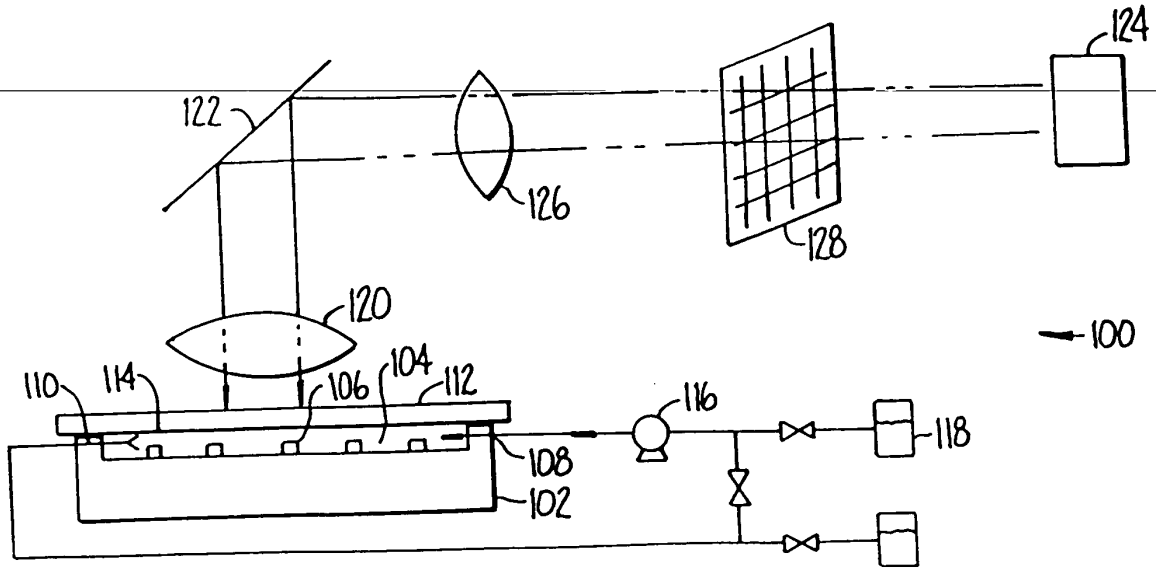


FIG. 22A

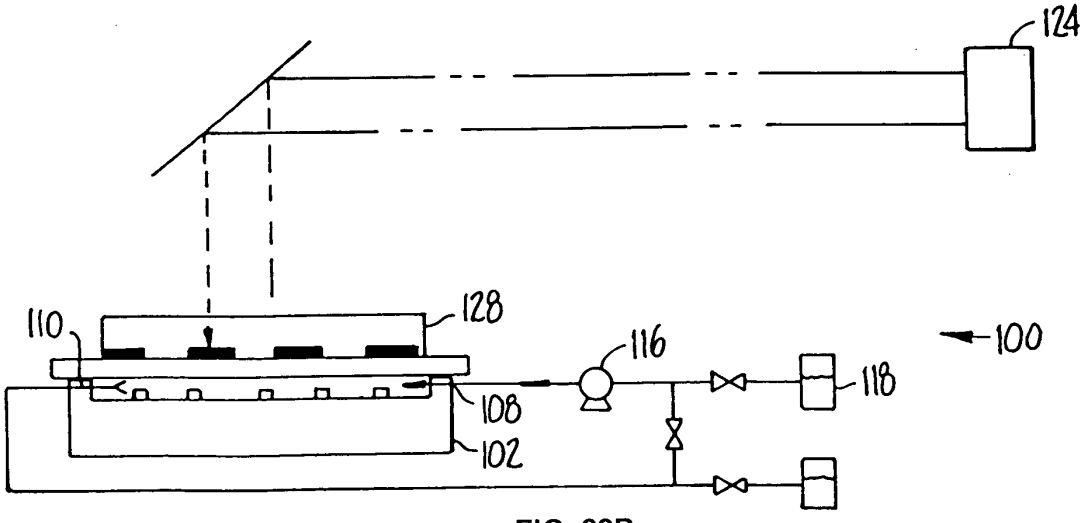


FIG. 22B

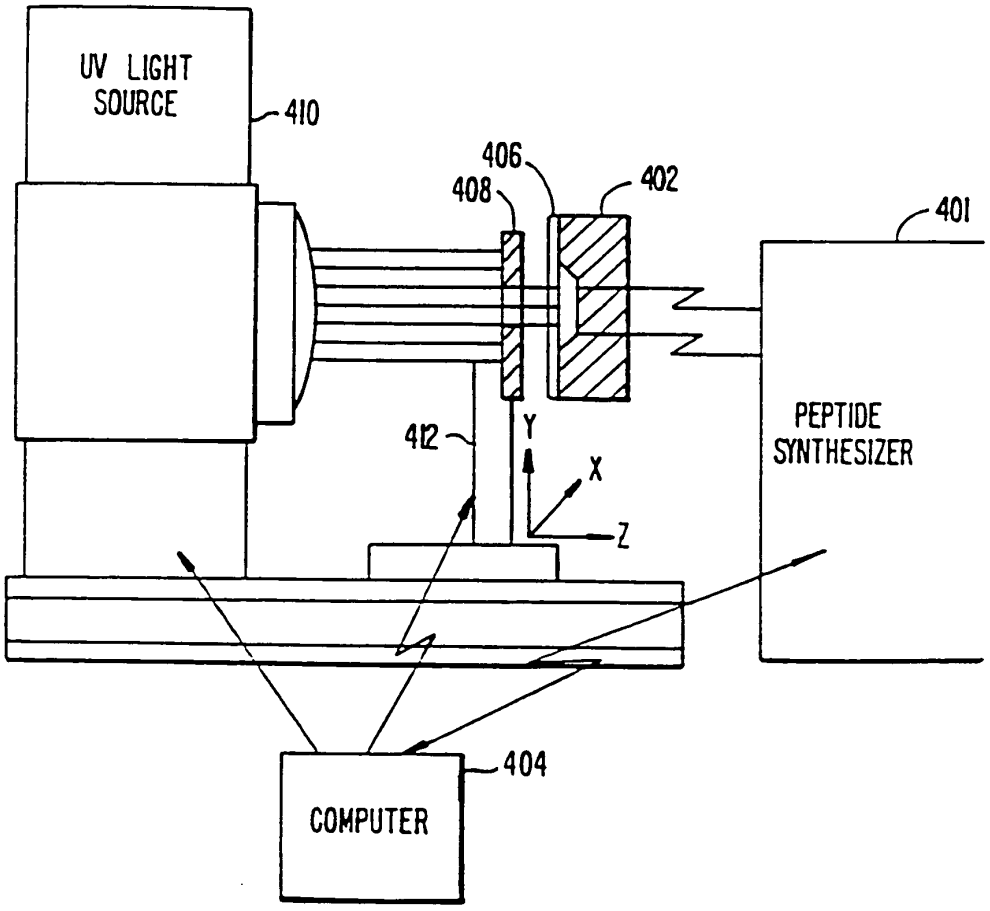

UV LIGHT SOURCE
410
406
408
402
401
412
Y
X
Z
PEPTIDE SYNTHESIZER
404
COMPUTER

FIG. 23

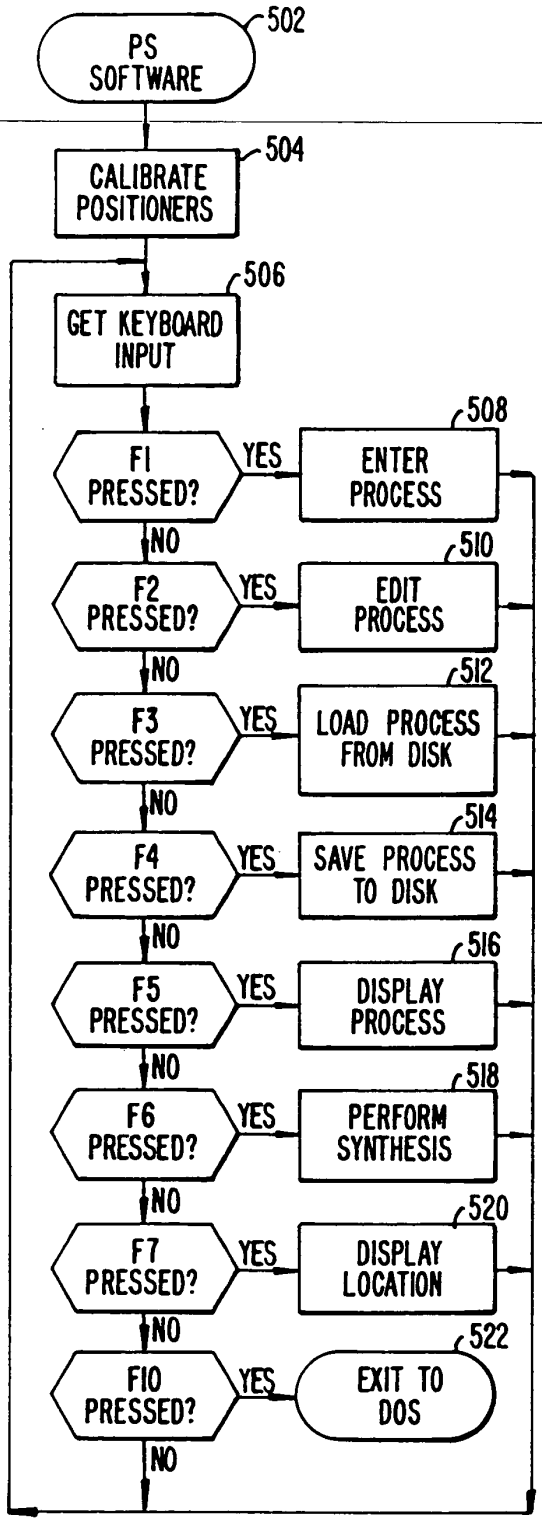


FIG. 24A

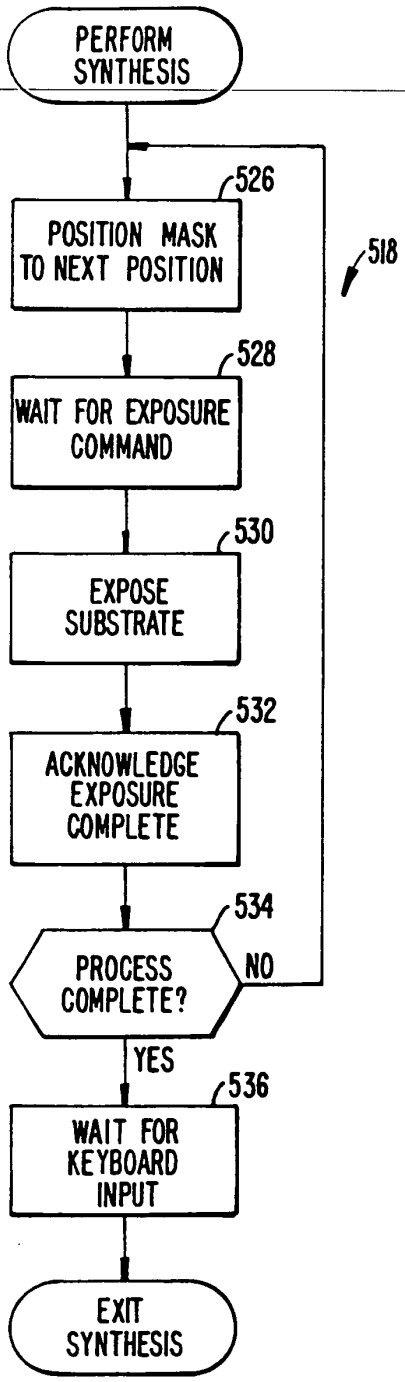


FIG. 24B

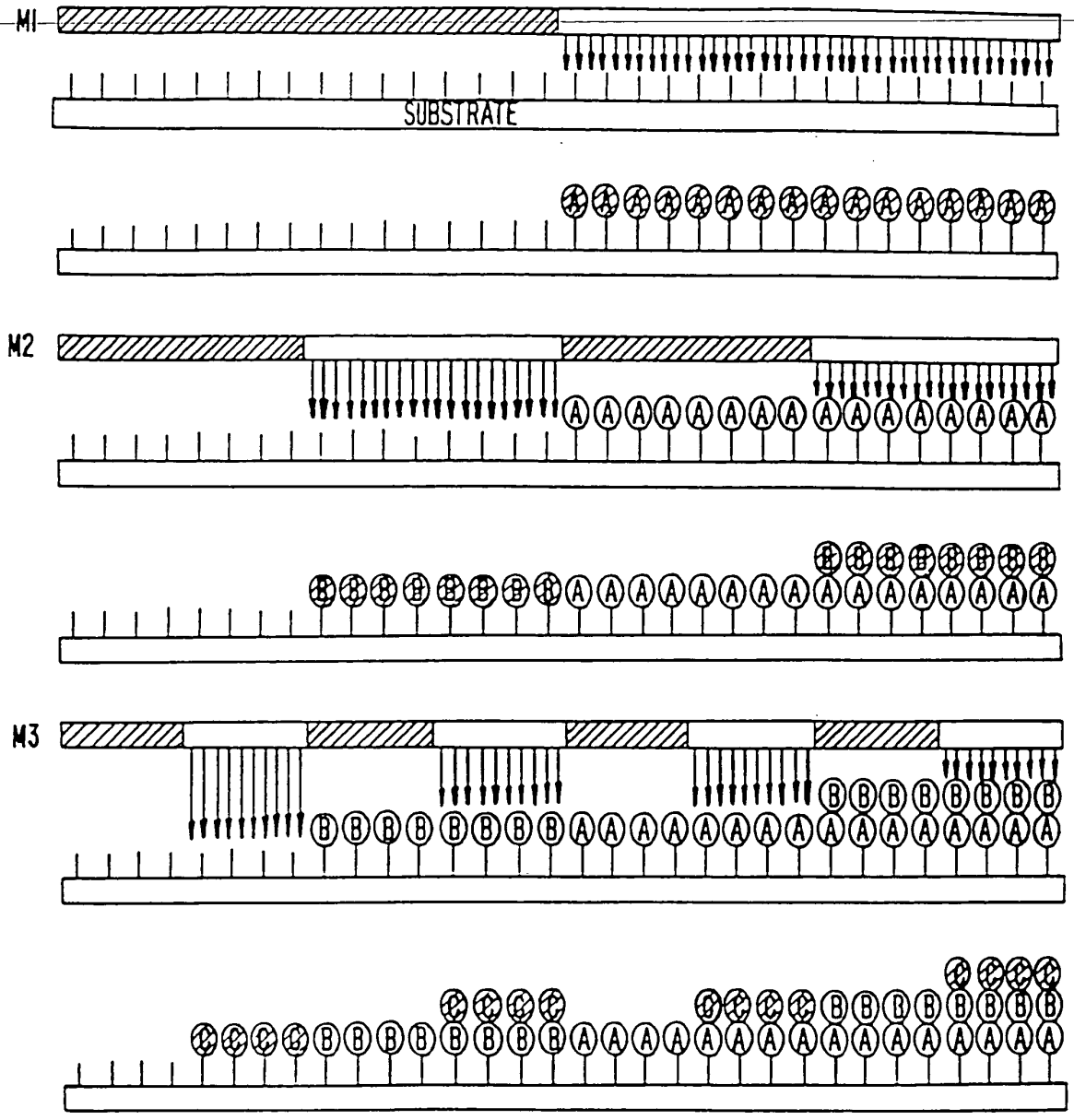


FIG. 25A

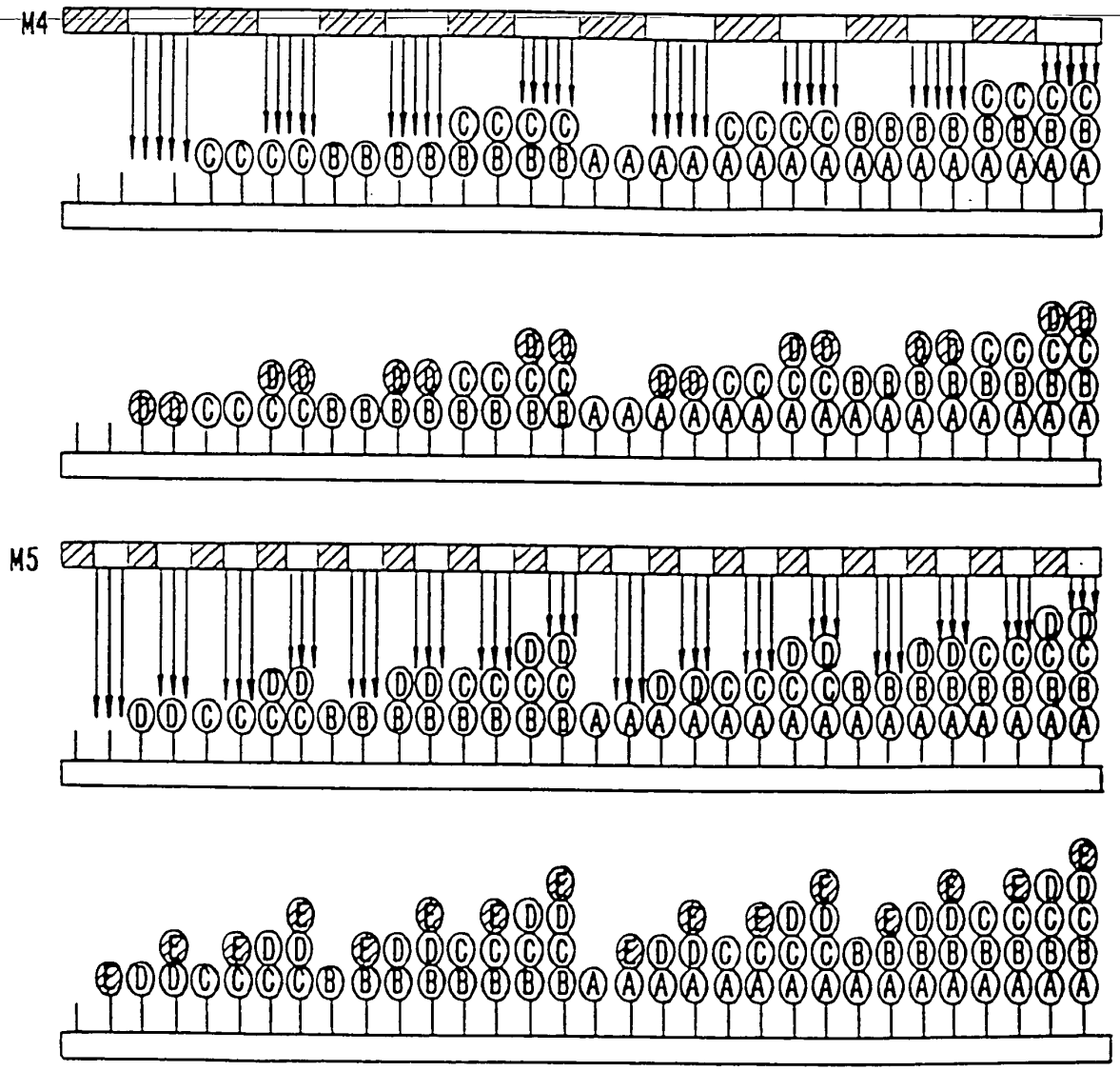


FIG. 25B

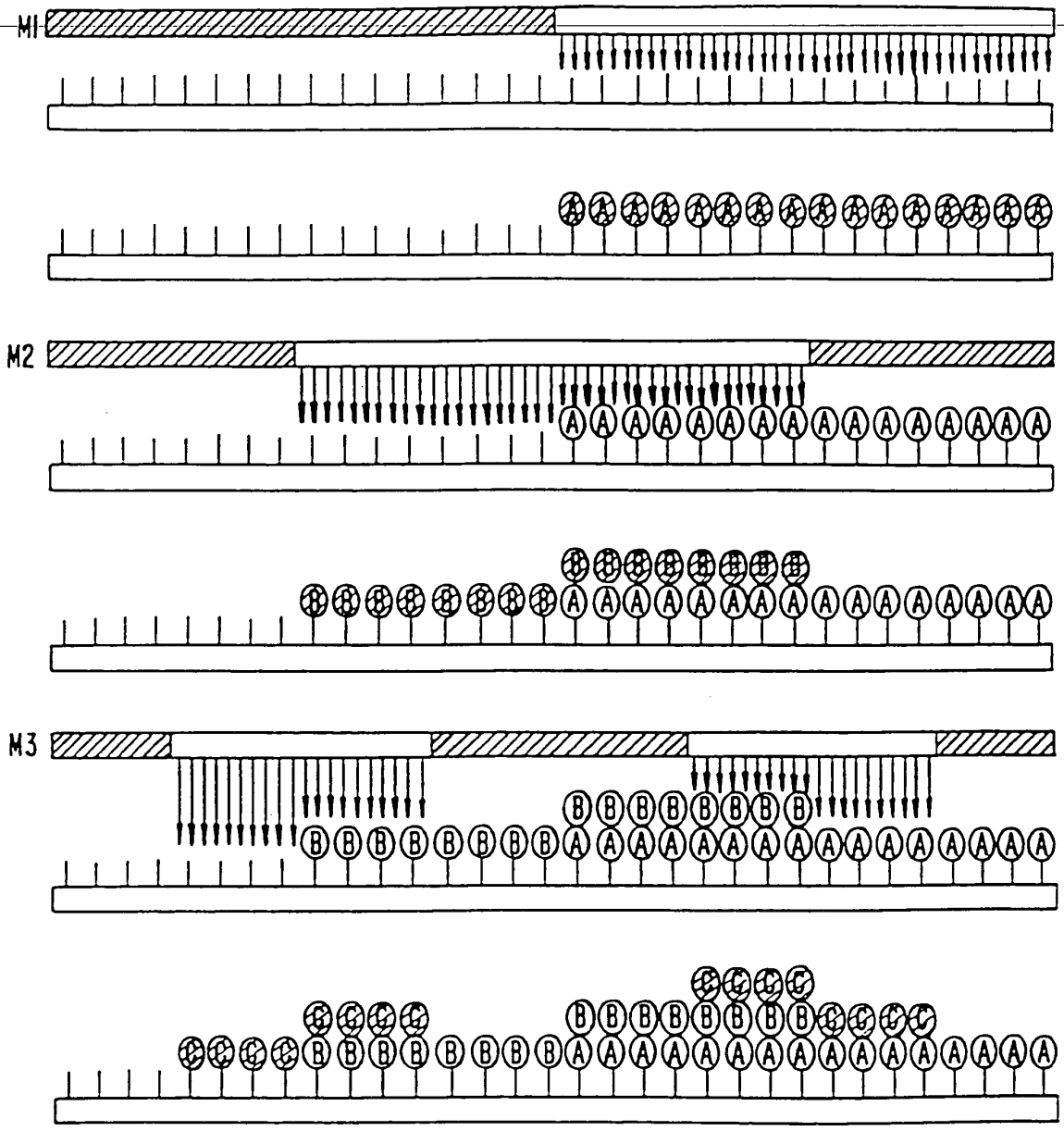


FIG. 26A

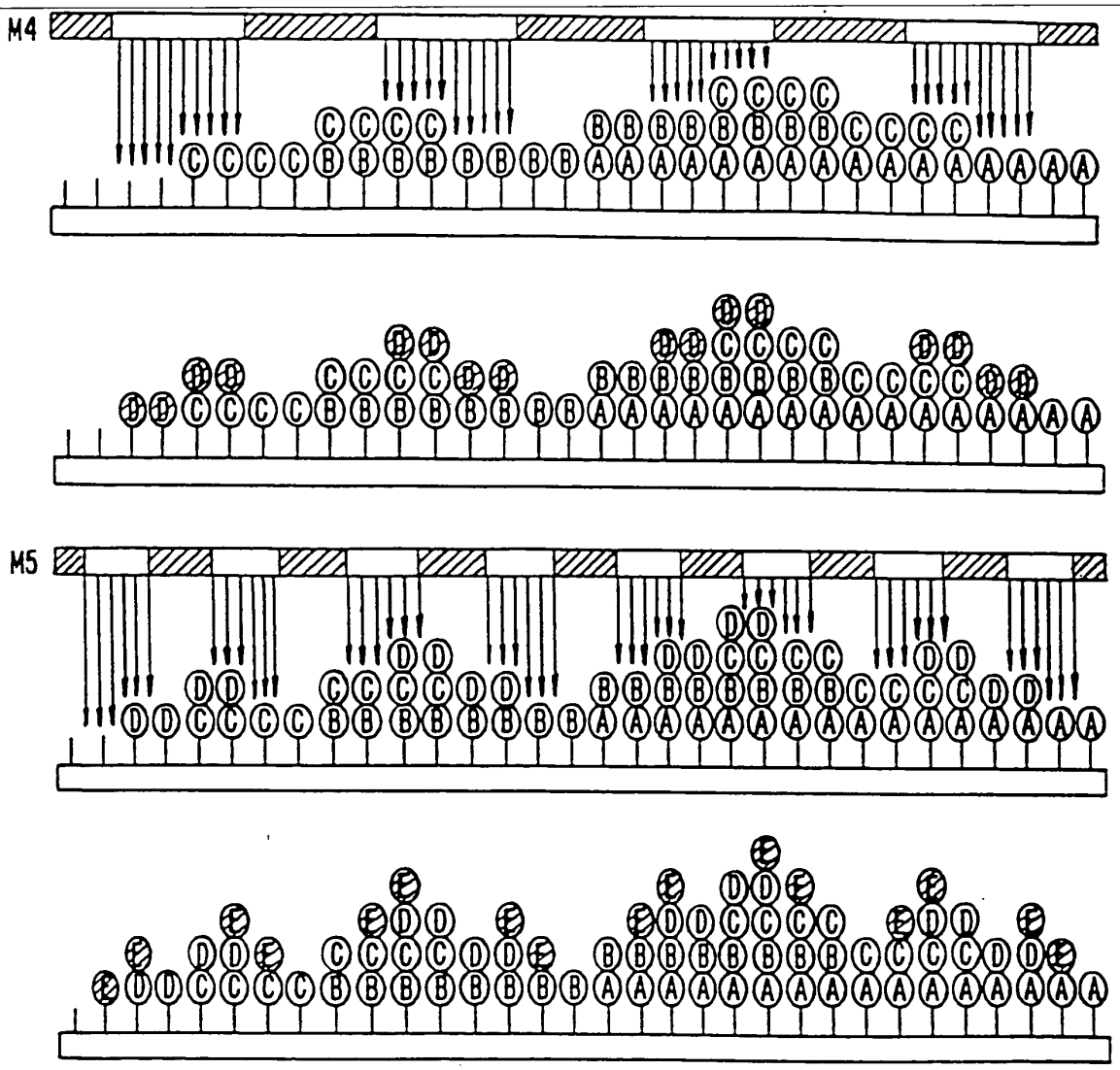


FIG. 26B

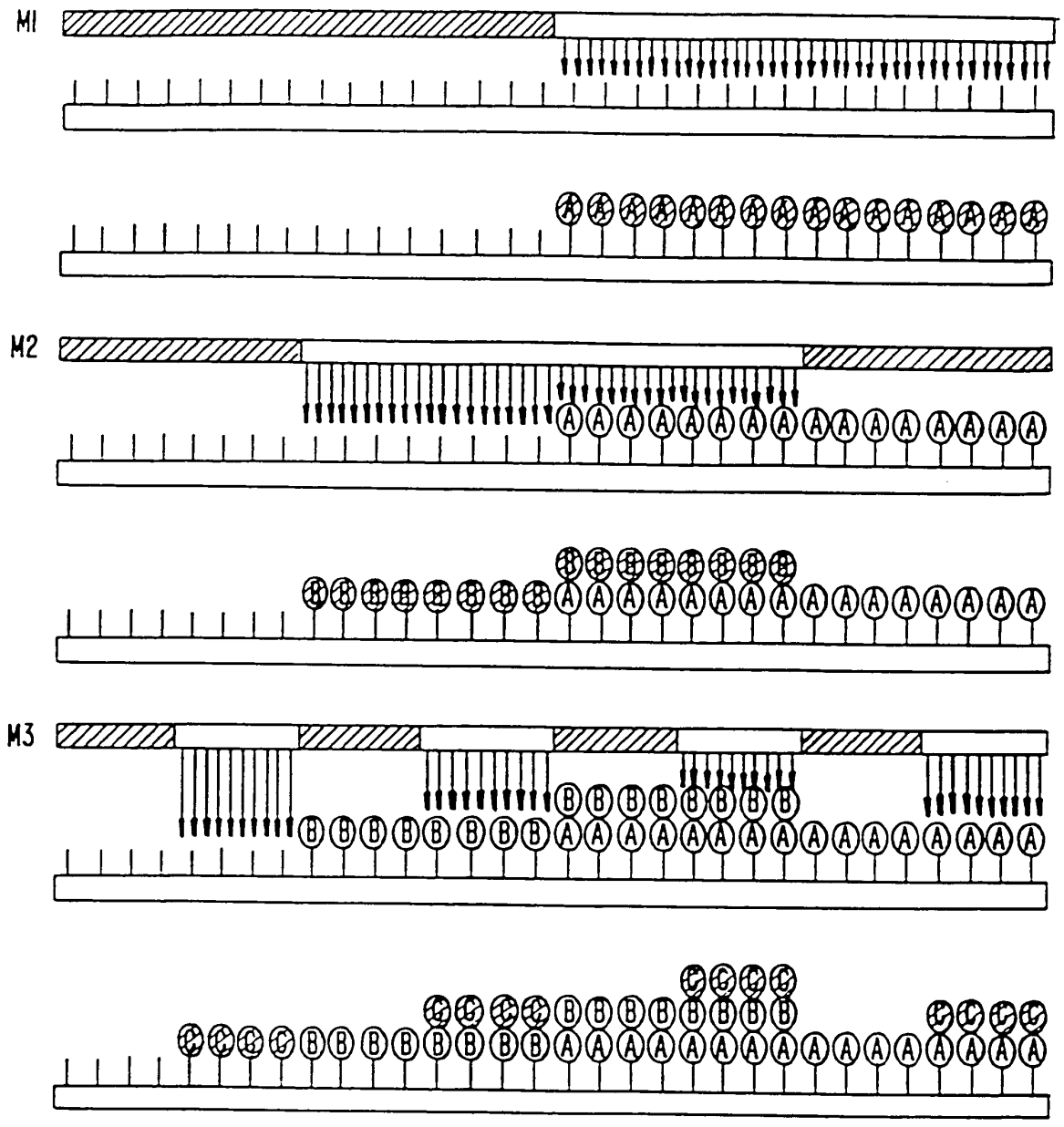


FIG. 27A

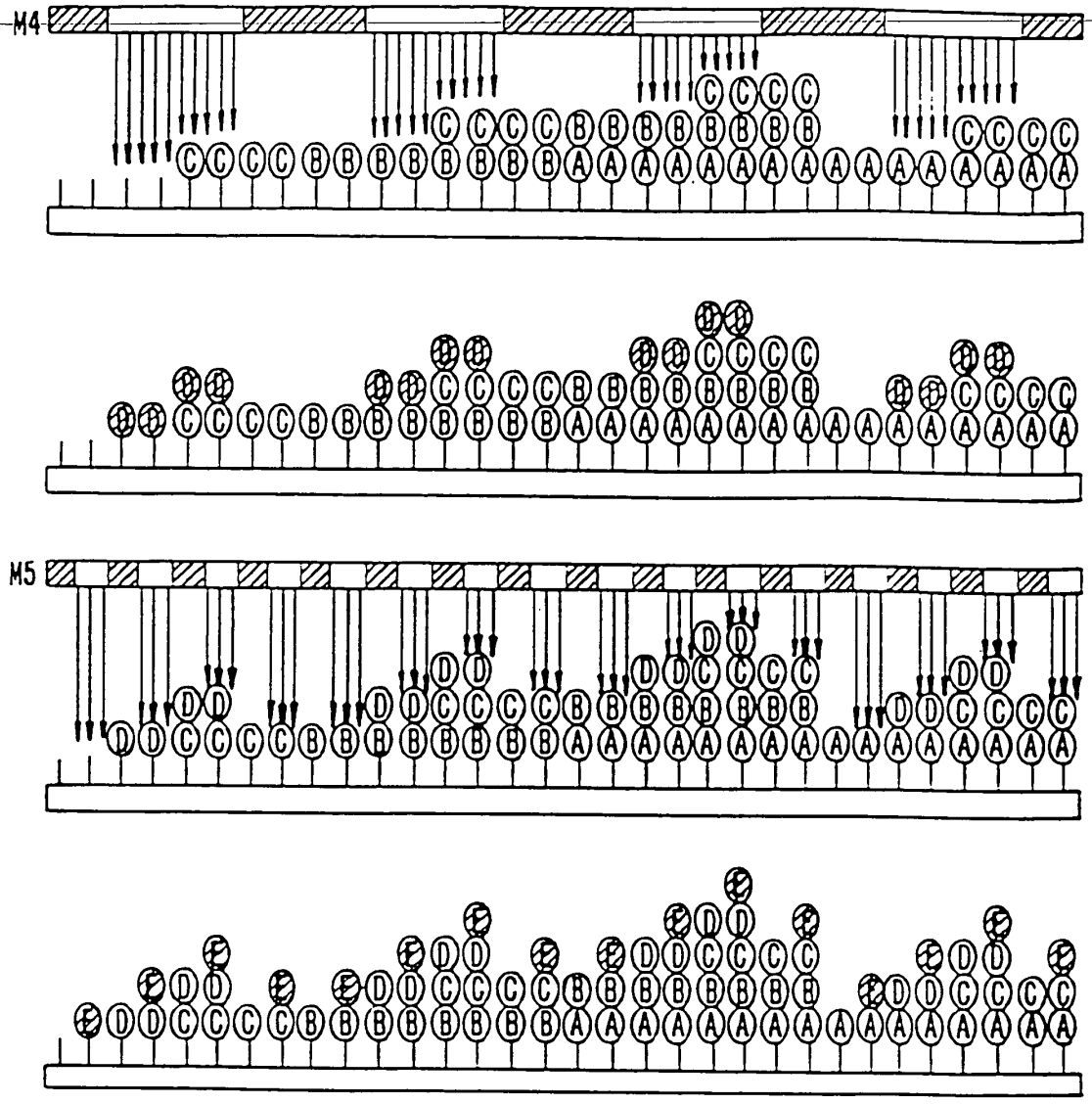


FIG. 27B

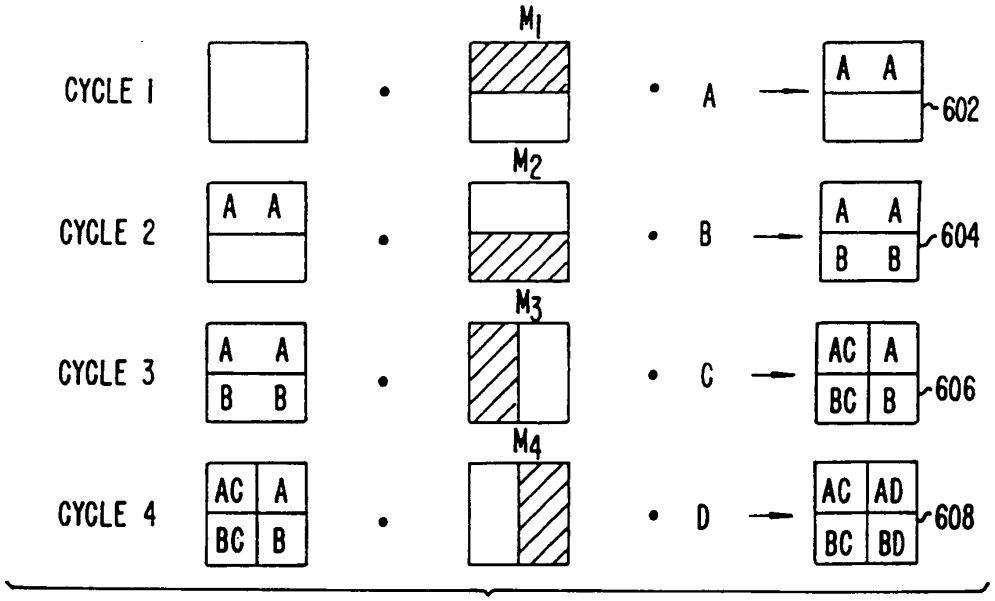


FIG. 28A

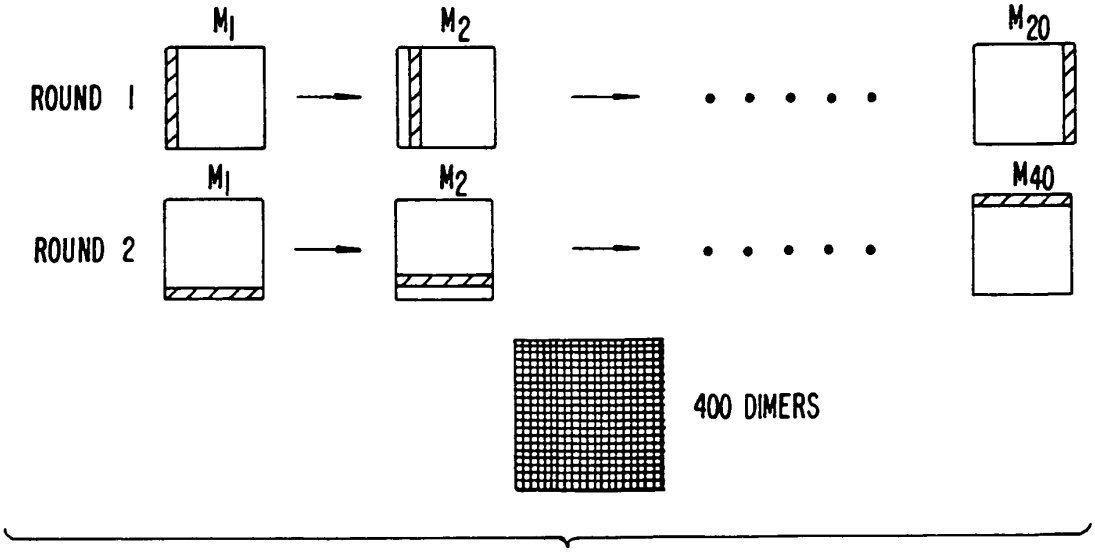


FIG. 28B

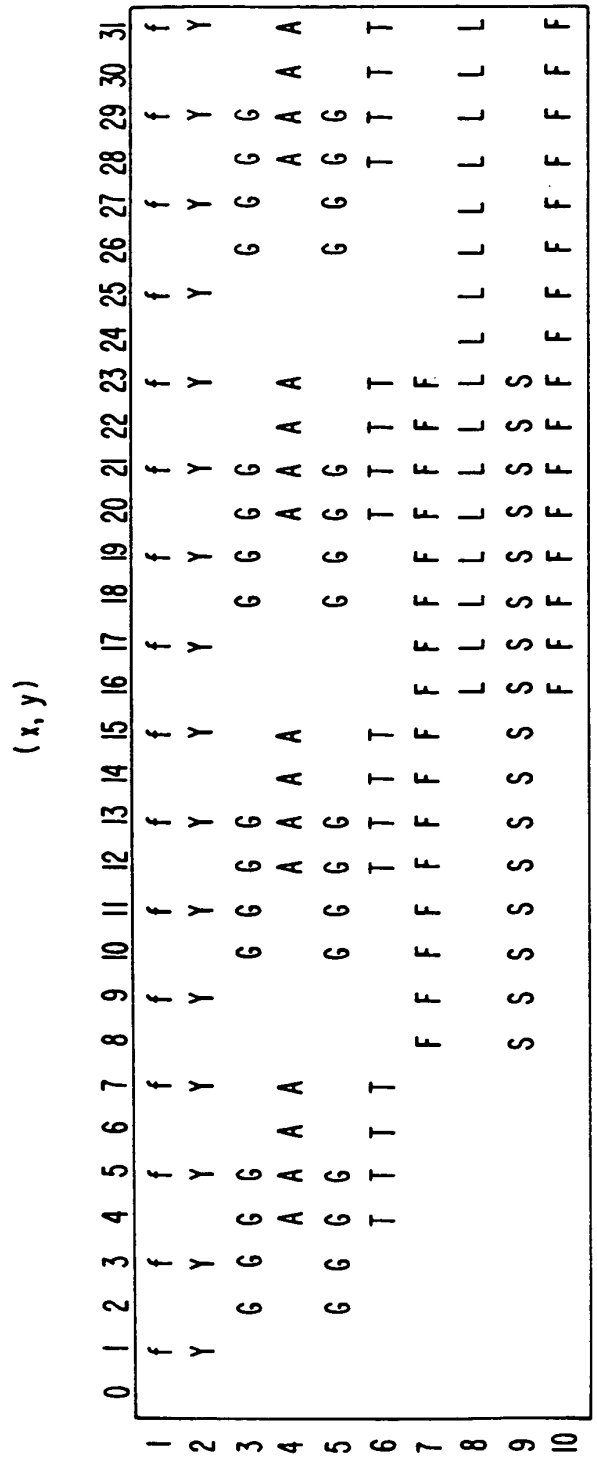
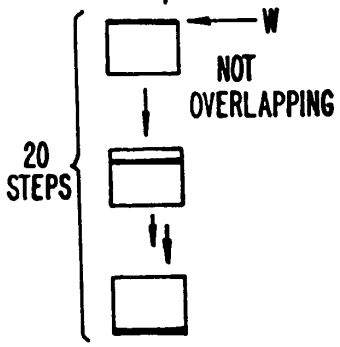

(x, y)
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
1 2 3 4 5 6 7 8 9 10

FIG. 29

STEP	AREA PHOTOLYZED	MASK	COUPLE
1	100%		T
2	100%	"	V
3	100%	"	V
4	100%	"	K
5	50%		F
6 TO 25	Y20		G, A, R, K, C, M, S D, E, N, Q, F, H W, Y, L, P, V, I, T
26	50%		Q
27	100%		R

WILL GENERATE AN ARRAY OF 4 CLASSES OF PEPTIDES:

(1) RXKVVT
(2) RQXKVVT
(3) RQXFKVVT
(4) RXFKVVT

} WHERE X REPRESENTS SUBSTITUTION OF ALL 20 L-AMINO ACIDS

FIG. 31

FIG. 30.

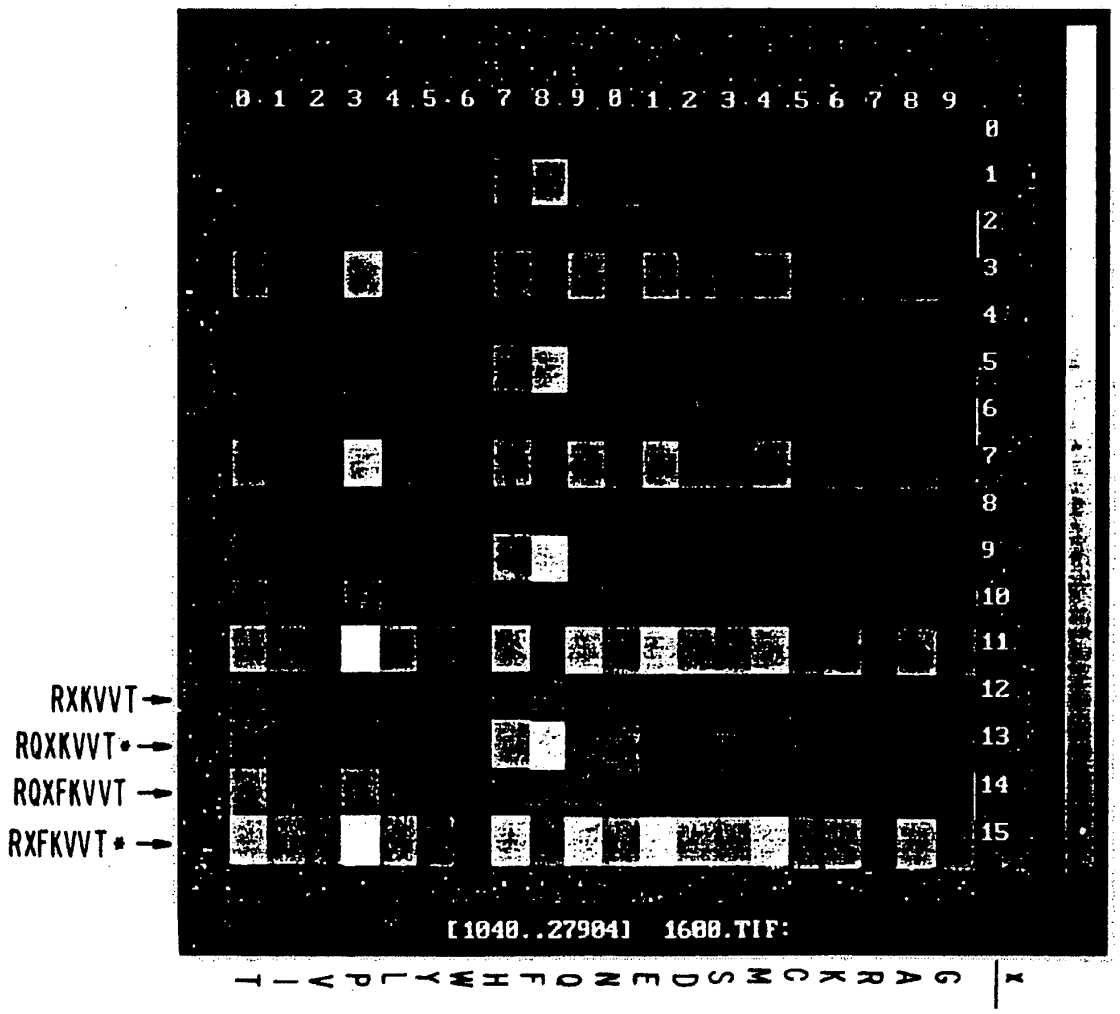


FIG. 32.

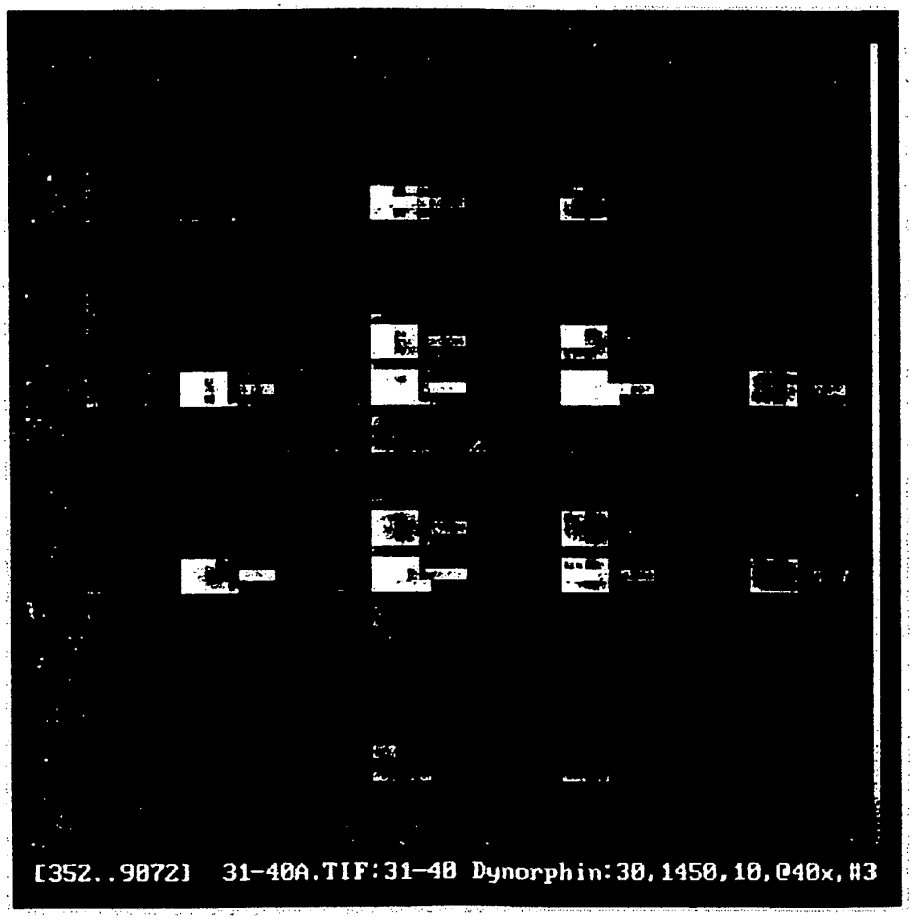


FIG. 33.

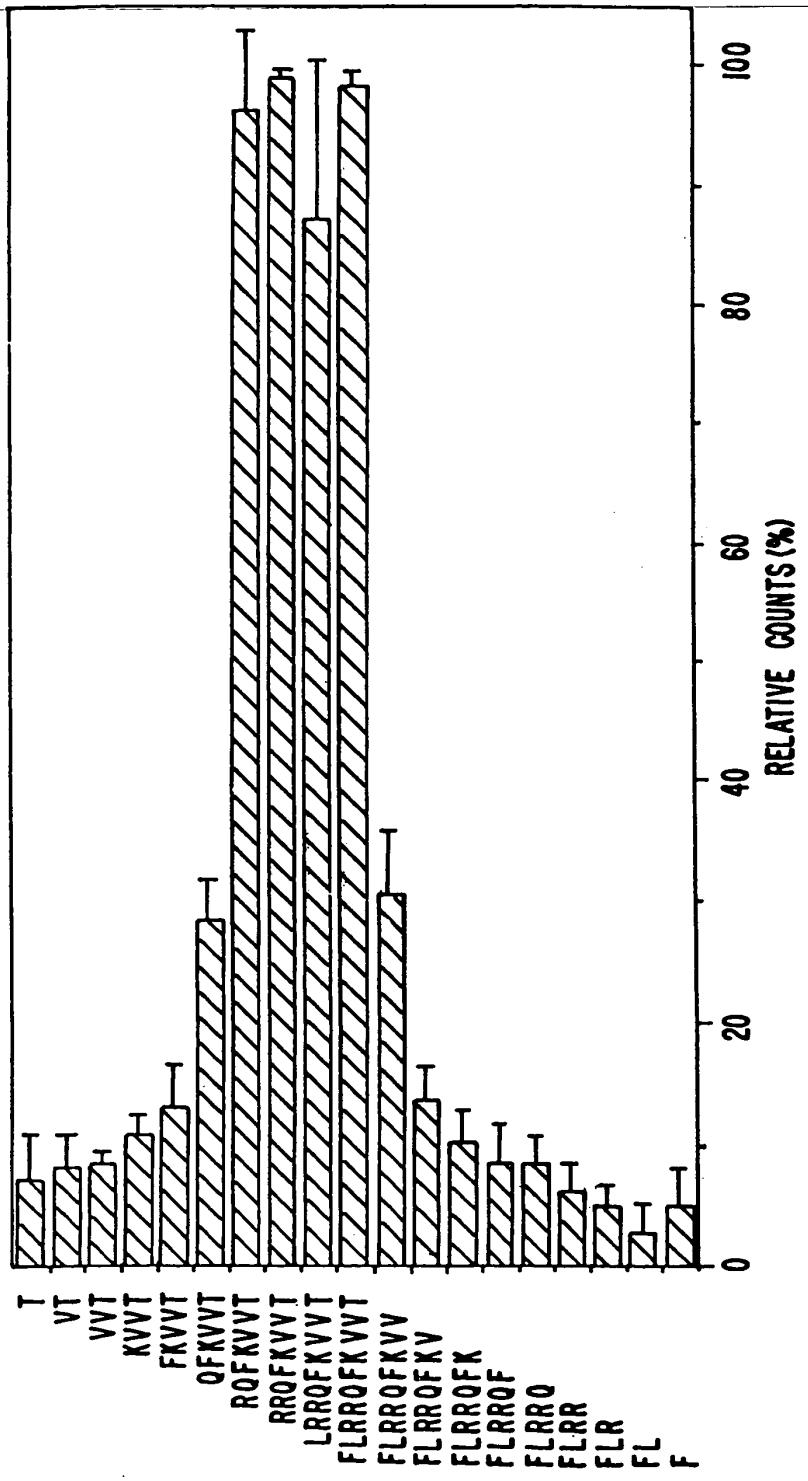

T
VT
VVT
KVVT
FKVVT
QFKVVT
RQFKVVT
RRQFKVVT
LRRQFKVVT
FLRRQFKVVT
FLRRQFKVV
FLRRQFKV
FLRRQFK
FLRRQF
FLRRQ
FLRR
FLR
FL
F
0
20
40
60
80
100
RELATIVE COUNTS (%)

FIG. 34

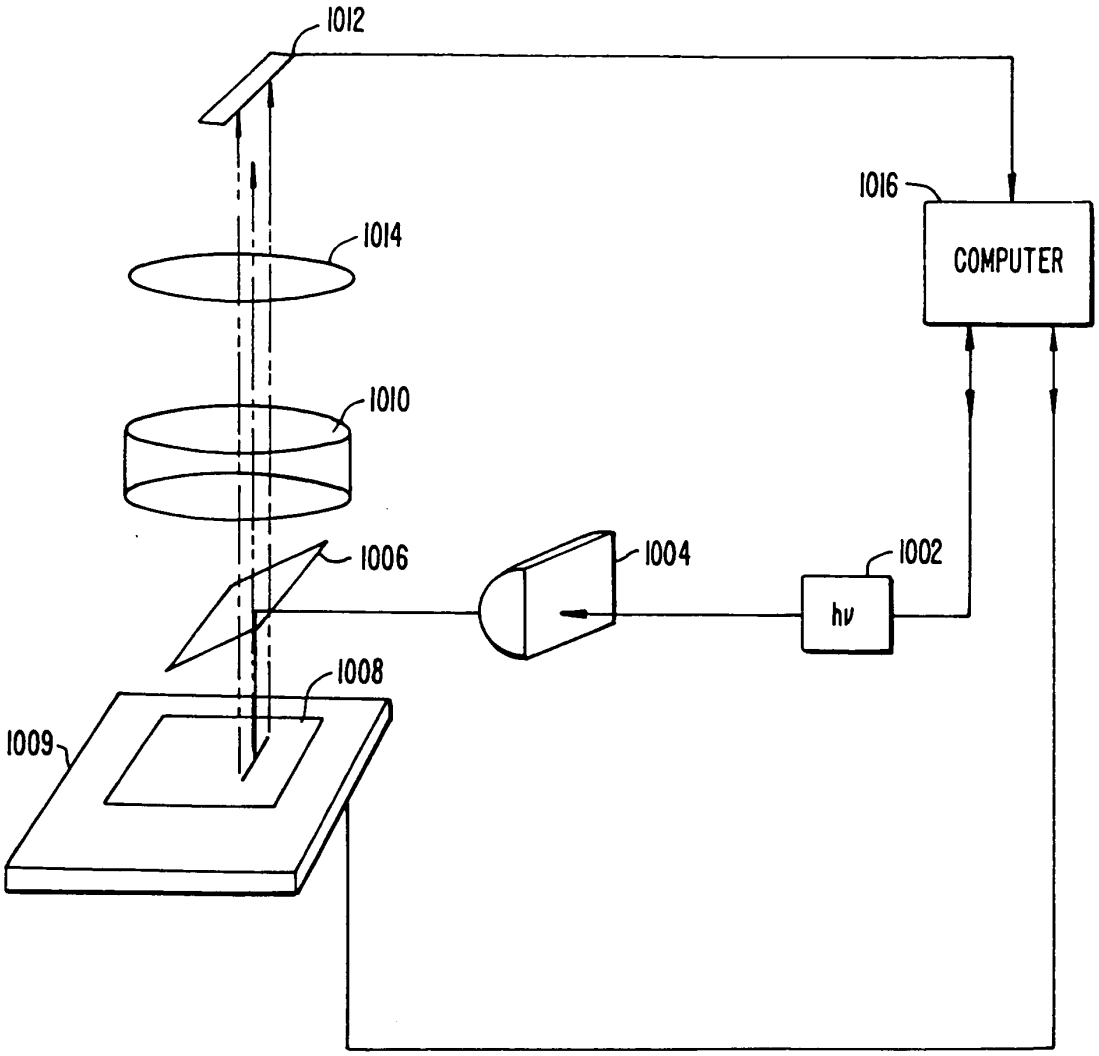


FIG. 35

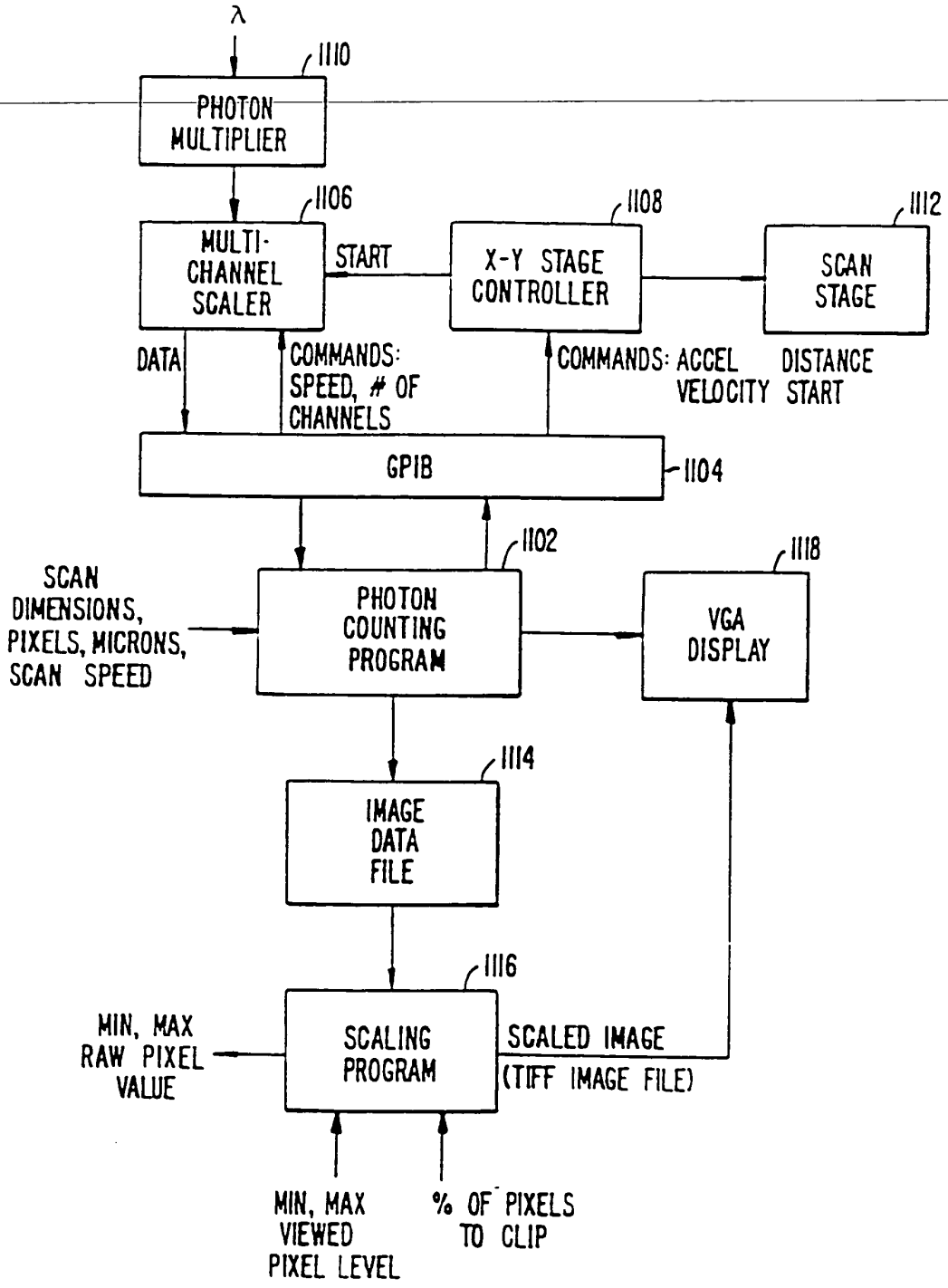

λ
1110
PHOTON MULTIPLIER
1106
MULTI-CHANNEL SCALER
START
1108
X-Y STAGE CONTROLLER
1112
SCAN STAGE
DATA
COMMANDS: SPEED, # OF CHANNELS
COMMANDS: ACCEL VELOCITY
DISTANCE START
GPIB
1104
1102
SCAN DIMENSIONS, PIXELS, MICRONS, SCAN SPEED
PHOTON COUNTING PROGRAM
1118
VGA DISPLAY
1114
IMAGE DATA FILE
1116
MIN, MAX RAW PIXEL VALUE
SCALING PROGRAM
SCALED IMAGE
(TIFF IMAGE FILE)
MIN, MAX VIEWED PIXEL LEVEL
% OF PIXELS TO CLIP

FIG. 36

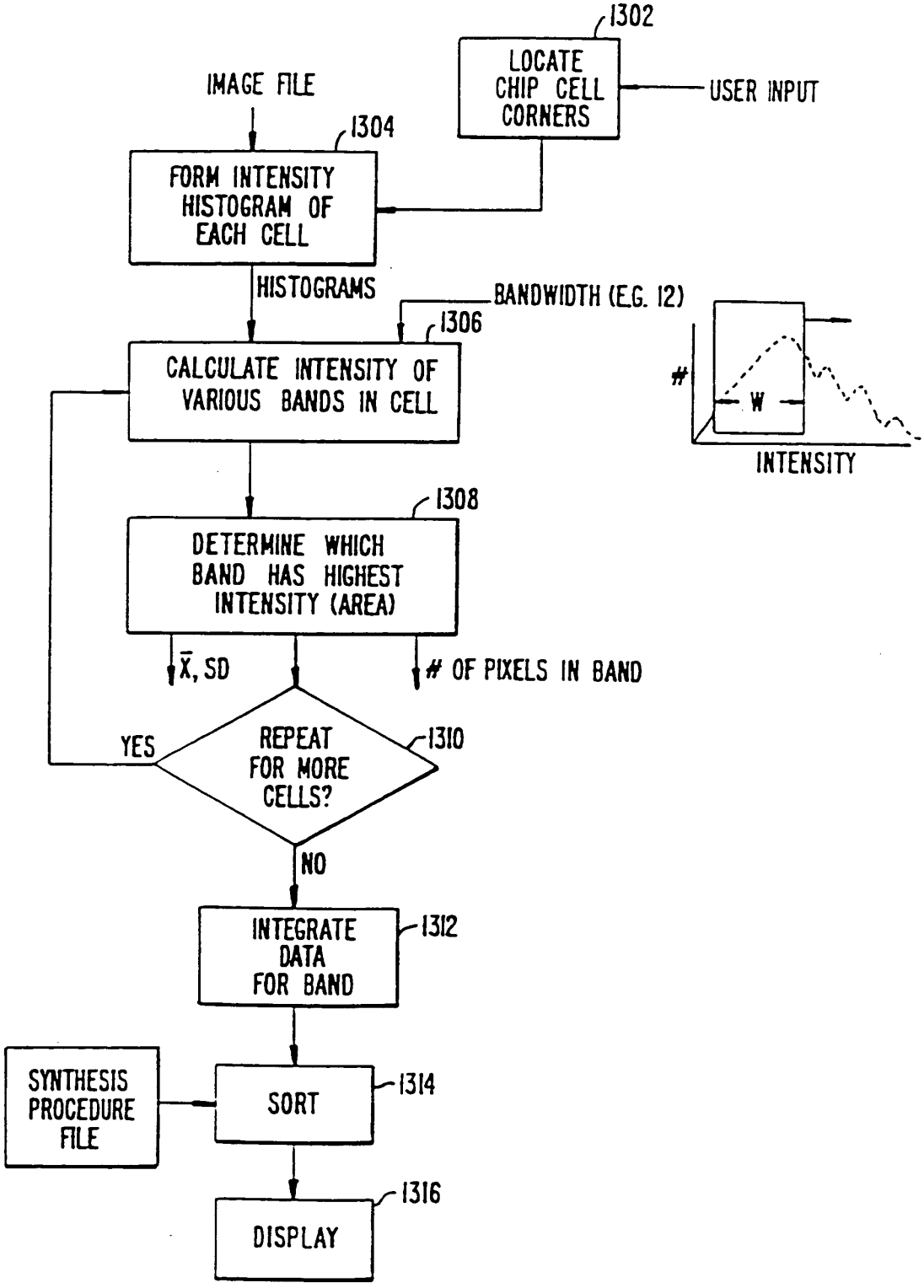
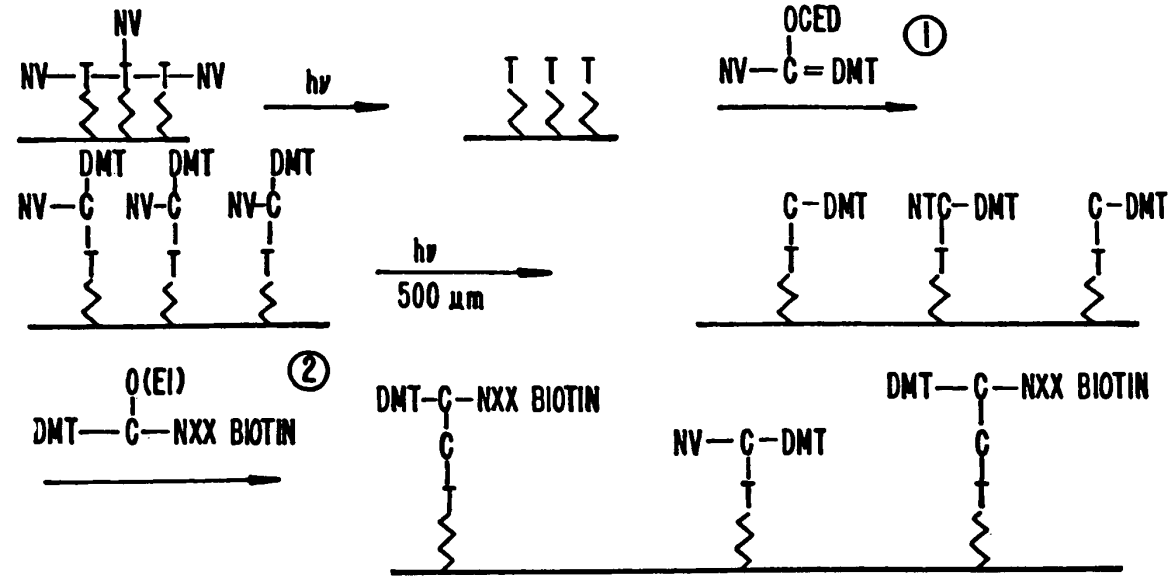

1302
LOCATE CHIP CELL CORNERS
USER INPUT
IMAGE FILE
1304
FORM INTENSITY HISTOGRAM OF EACH CELL
HISTOGRAMS
BANDWIDTH (E.G. 12)
1306
CALCULATE INTENSITY OF VARIOUS BANDS IN CELL
#
W
INTENSITY
1308
DETERMINE WHICH BAND HAS HIGHEST INTENSITY (AREA)
X̄, SD
OF PIXELS IN BAND
YES
REPEAT FOR MORE CELLS?
1310
NO
INTEGRATE DATA FOR BAND
1312
SYNTHESIS PROCEDURE FILE
SORT
1314
1316
DISPLAY

FIG. 37


NV
NV—T—T—T—NV
hν
T T T
OCED
NV—C=DMT
①
DMT DMT DMT
NV—C NV-C NV-C
T T T
hν
500 μm
C-DMT NTC-DMT C-DMT
T T T
O(EI)
DMT—C—NXX BIOTIN
②
DMT-C-NXX BIOTIN
C
T
NV—C-DMT
T
DMT—C—NXX BIOTIN
C
T

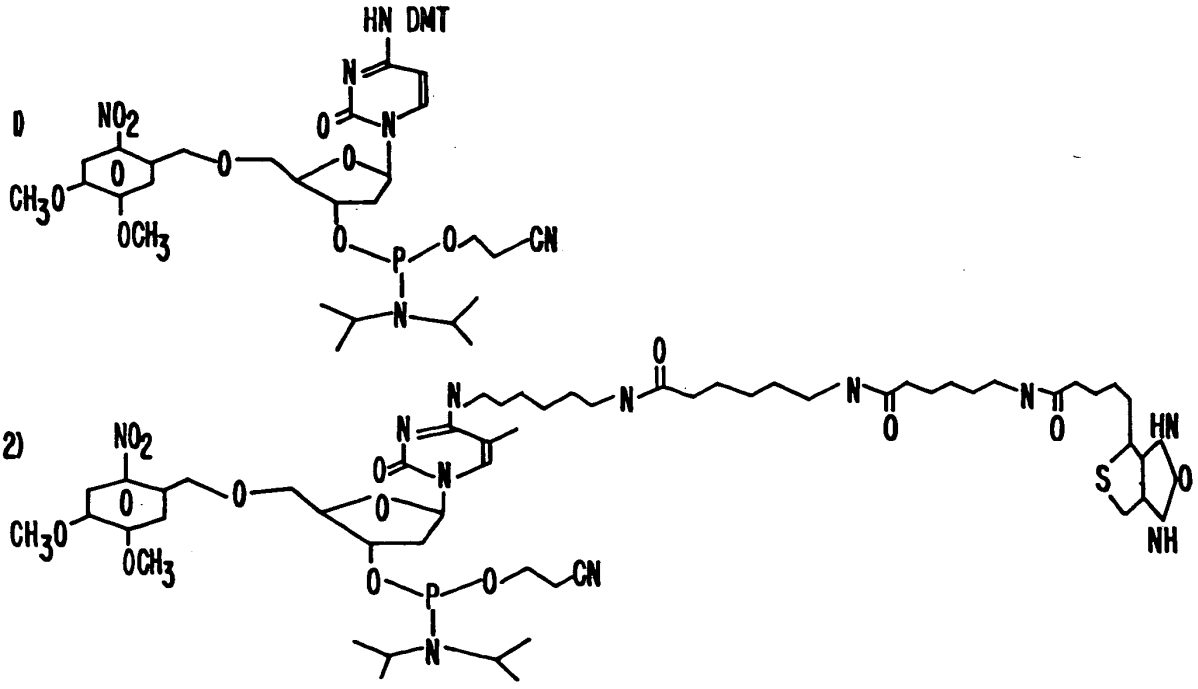

1)
HN DMT
N
O
N
NO2
O
O
CH3O
OCH3
O
O
P
O
CN
N
2)
O
N
N
N
N
N
O
O
O
HN
S
O
NH
NO2
O
O
CH3O
OCH3
O
O
P
O
CN
N

FIG. 38

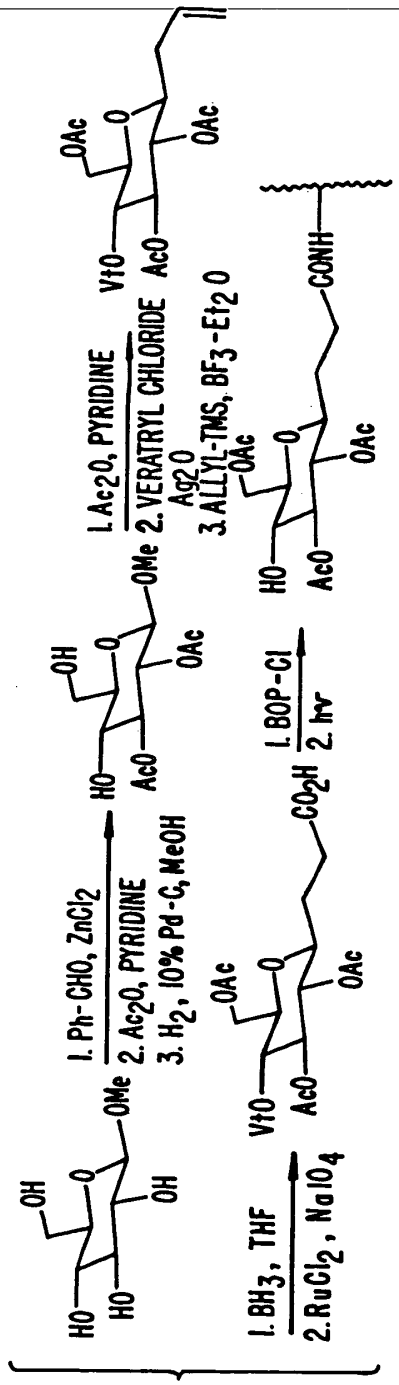


FIG. 40A

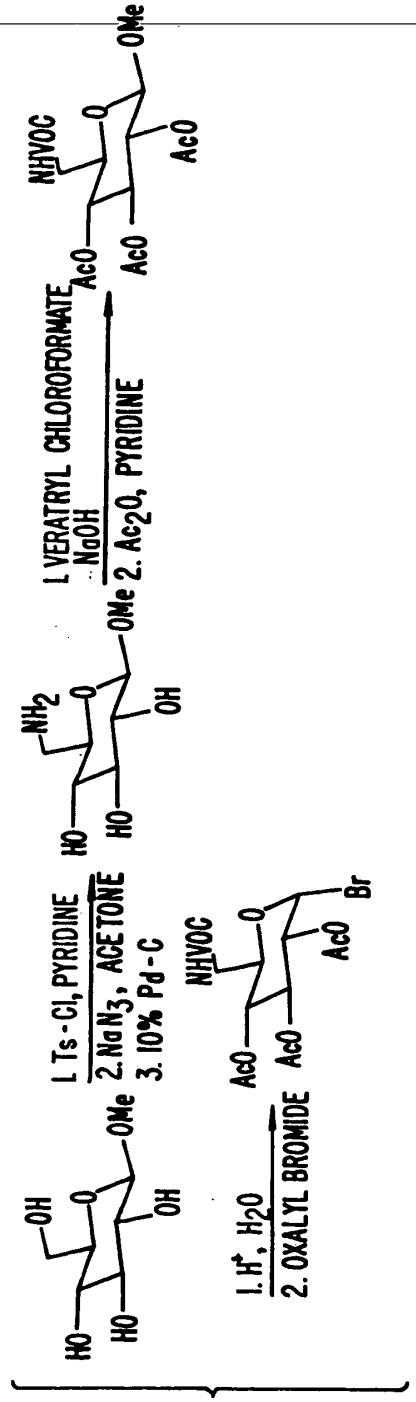


FIG. 40B

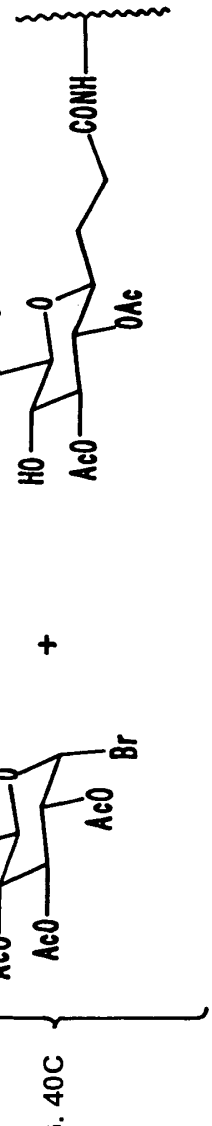


FIG. 40C

FIG. 40D

FIG. 40E

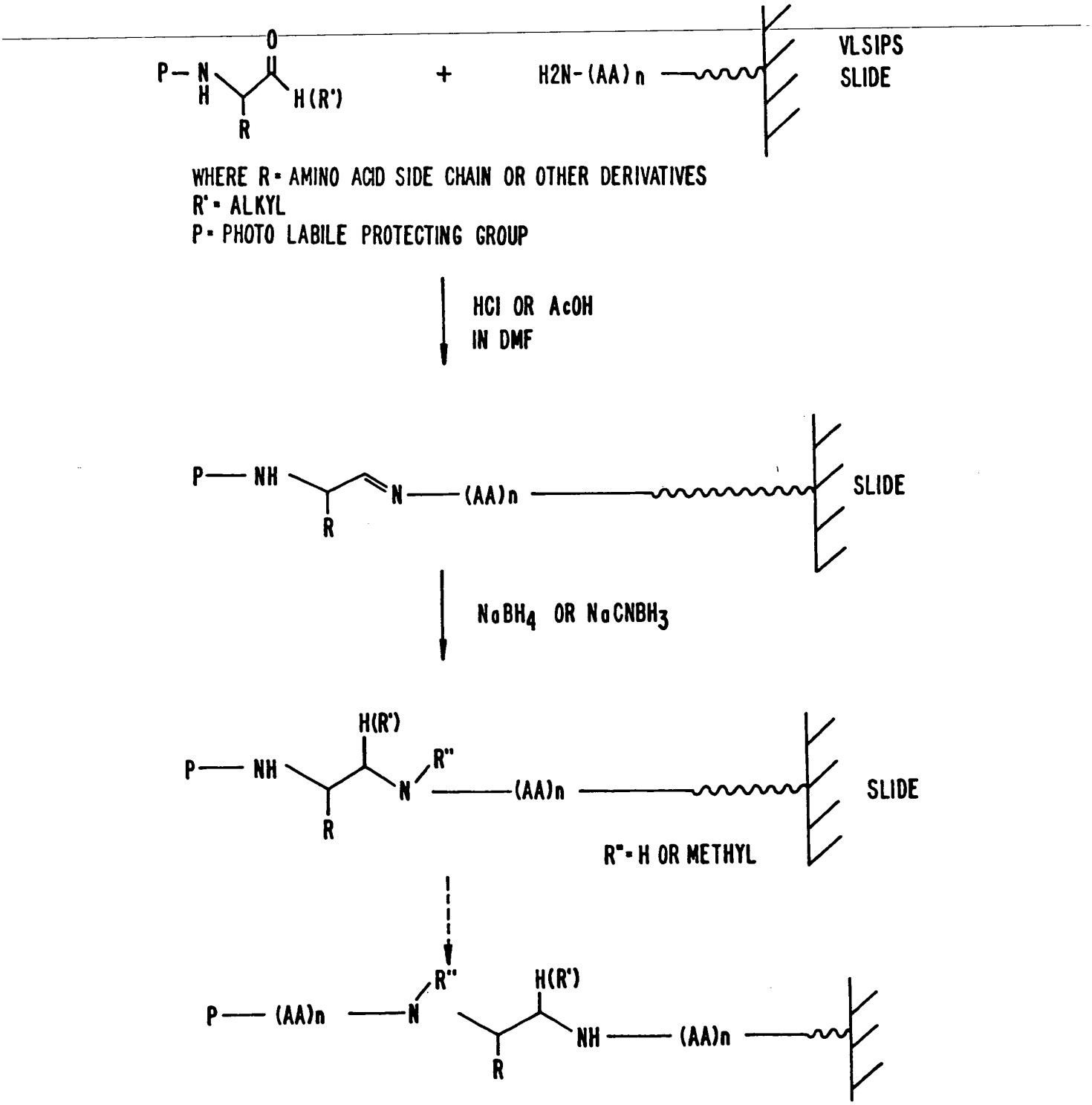

P—N
H
O
H(R')
R
+
H2N-(AA)n
VLSIPS
SLIDE
WHERE R = AMINO ACID SIDE CHAIN OR OTHER DERIVATIVES
R' = ALKYL
P = PHOTO LABILE PROTECTING GROUP
HCl OR AcOH
IN DMF
P— NH
N— (AA)n
SLIDE
NaBH4 OR NaCNBH3
H(R')
R''
R''= H OR METHYL
P— (AA)n
NH— (AA)n

FIG. 41